Textile World

JANUARY 1942

WAR and Textiles

Here's a "pointer" on READY CASH

Want a "pointer" on the right way to obtain ready cash in your business? Here it is . . .

You get cash on shipment. Yet your customers receive their regular terms. Commercial Factors, by paying you as you ship, eliminates tying-up a good portion of your capital in receivables for 30, 60 or 90 days . . . assures you a steady source of ready cash.

Commercial Factors assumes the credit risks and eliminates collection expenses and bookkeeping details as well.

Remember these features when you think of factoring, especially when considering your plans for 1942.

COMMERCIAL FACTORS CORPORATION

Fred'k Victor & Achelis, Inc. Established 1828

Schefer, Schramm & Vogel Established 1838

Peierls, Buhler & Co., Inc. Established 1893

TWO PARK AVENUE, NEW YORK
SEVENTY-SEVEN FRANKLIN ST., BOSTON

TEXTILE WORLD, Vol. 92, No. 1, January, 1942. Published monthly by McGRAW-HILL PUBLISHING CO., INC., (Bragdon, Lord & Nagle Division). Publication Office, 99-129 North Broadway, Albany, N. Y. Editorial and Executive Offices, 330 West 42nd Street, New York, N. Y. Allow at least ten days for change of address. All communications about subscriptions should be addressed to the Director of Circulation, 330 West 42nd Street, New York, N. Y.
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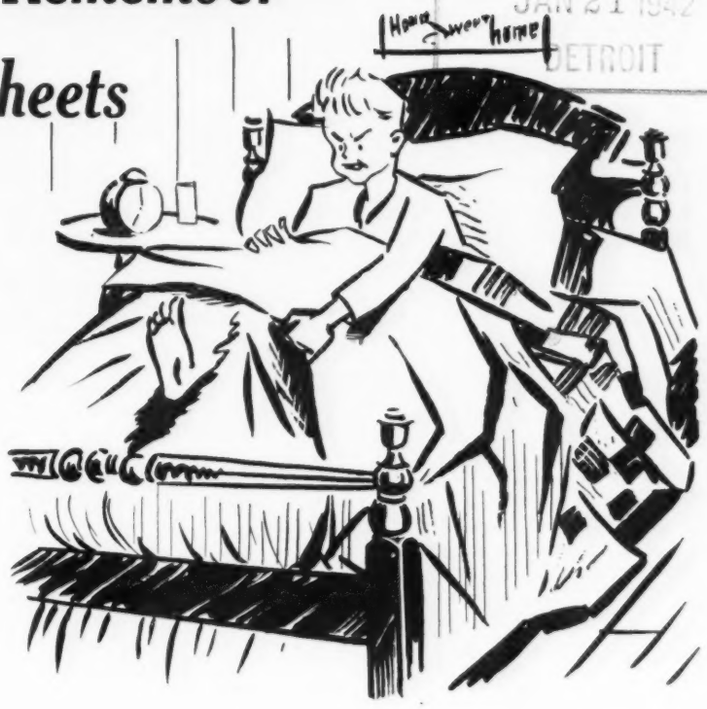
JAN 21 1942
DETROIT

Do You Remember

Those Old Time Sheets

with the

Seam Down the Middle



If you are 35 years old, you probably can remember your boyhood experience with two-strip sheets with seams down the middle how the seams opened up after a time and your toes caught in the slots, to your own discomfort and the dismay of your mother when the process of disengaging your trapped toes resulted in torn sheets.

Those sheets were made at home, from 40" sheeting—a considerable product of our textile mills of those days.

Broad looms for weaving full-width sheets were built in the days of the common loom; but they were not numerous, nor were they efficient. Naturally their product was expensive and not generally used.

General adoption of full-width sheets as we know them today came with the appearance of the Draper L Model broad sheeting loom, which because of its ease of operation and greatly increased product per unit of labor put the price of broad sheets within the reach of the average housewife's purse.

The first Draper broad sheeting loom, our F Model, was brought out in May, 1899. It was not the success we had looked for, being little better, except for its automatic features, than the common looms then on the market.

After six long years of further experiment, we sold our first order of L Model looms in February 1905. Since then full-width sheets have come into common use in this country, and they have been almost universally made on L Model looms.

In 1934 we brought out a high speed L Model known as the XL. It brings further reduction in the cost of weaving full-width sheets.

DRAPER CORPORATION

Hopedale Massachusetts

Atlanta Georgia

Spartanburg S C

MAY all things in your New Year have the "sparkle" and freshness of newly fallen snow. The present turmoil is history repeating itself, out of which shall be born days based on goodness and righteousness * Let's all do our part to bring a contentment and happiness that shall endure * We here in this neck of Uncle Sam's woods—"Good Old New England"—wish one and all good fellowship and good will.

HOWARD BROS. MFG. CO.

Harry C. Coley
President

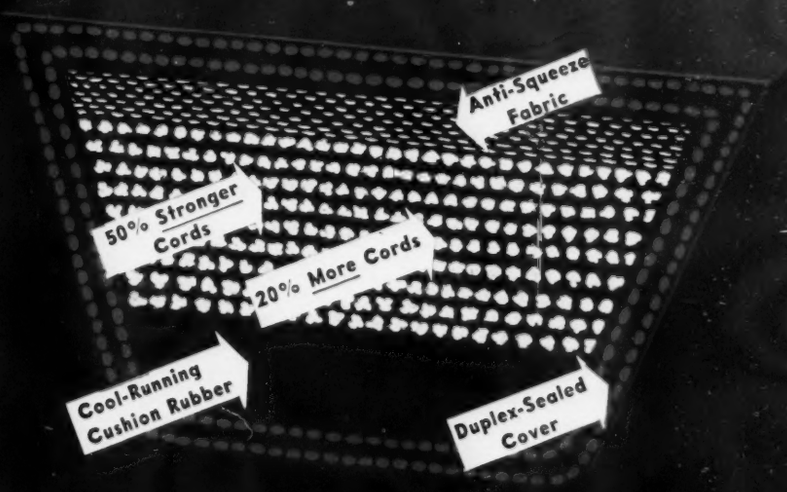
50% STRONGER CORDS
20% MORE CORDS
In Texrope* Super-7 V-belts!

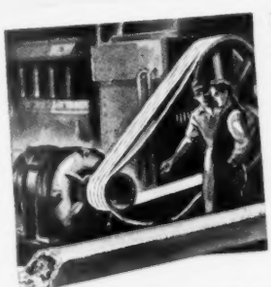
1 50% STRONGER CORDS! Sensational new Flexon process makes cords 50% stronger than even those in former great Texrope belts.

2 20% MORE CORDS! Count them! You get 20% more of these tough, extra pulling power cords in every Texrope Super-7.

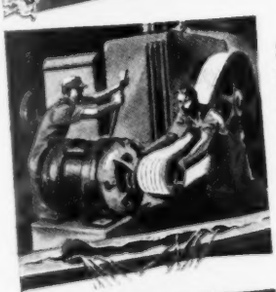
3 INCREASED LIFE! Cords float on amazing cool-running cushion rubber that absorbs shock . . . actually increases belt life phenomenally.

4 EXTRA PROTECTION! Exclusive duplex-sealed cover protects pulling cords against dirt, grit, moisture, and other adverse elements.

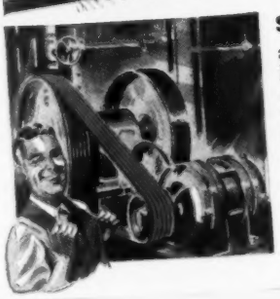




LOOK OUT FOR DANGER in belts with stiff, unpliable cords! Such belts *look* strong . . . but actually they buckle over sheaves, build up excessive heat that attacks pulling cords. Result: Belt failure far sooner than you expect it.



WARNING SIGN! Sagging, slipping belts mean too much stretch not backed up by balanced cord strength. Motor must be pulled back often to take up slack. Result: When stretch limit is reached belt breaks under tension.



SUPER-7 TEXROPE BELTS are made by amazing Flexon process that *combines* flexibility with low stretch . . . great strength. Cords float on cool-running, shock absorbing cushion rubber. Result: *true* strength . . . *true* pulling power . . . *true* endurance.

MORE production out of *present* equipment—that's the big need today. And that's what you get by changing over your power transmission to new Texrope Super-7 V-belt Drives!

For here's the newest V-belt line on the market—developed and built for modern high-speed production . . . to give you greater belt pulling strength and longer belt life . . . and add urgently needed efficiency to your machines.

You'll like these new belts — with 50% stronger "Flexonized" cords . . . 20% more cords . . . newly developed cool-running rubber cushion section to absorb operating shocks . . . "duplex-sealed" two-ply cover.

And you'll like their true V-shape for greatest groove-grip action . . . their silent, slipless operation.

So — do as hundreds of other hard-pressed companies are doing today. Use the new Super-7 V-belts to give increased production capacity to your present equipment.

Call your dealer or the Allis-Chalmers district office near you. Or write direct, asking for Bulletin B6190. A 1470

Available in All Sizes
½ hp to 2000 hp

ALLIS-CHALMERS
MILWAUKEE·WISCONSIN

*Trade mark registered U. S. Patent Office. Texrope Super-7 Belts are the result of the co-operative research and design genius of *two* great companies — Allis-Chalmers and B. F. Goodrich — and are sold exclusively by Allis-Chalmers.

Submarines Again!

Comments by Henry G. Lord

WHEN I was writing the "Comments" for last month, I little thought that before the next issue was published there would again be submarines on our coasts. This time they are not bringing dyestuffs, but a deadly cargo of torpedoes and shells. The United States is at war once more.

Under these circumstances, the New Year's impulse of happiness and good will is not easy to maintain and the thought of peace, which we associate with good will to men, seems a long way off. But if peace is not in sight, yet surely there is a great deal to be thankful for today and the hope for much more thankfulness to come.

We are at last a united nation in our objectives and each one realizes that he has a part to play in winning this war, not through individual effort alone, but by team work in our organizations and communities. And surely that is something to be thankful for. If we, as individuals, dedicate ourselves to this job of winning the war through hearty cooperation, our efforts will be so productive that no power on earth can check us. We have undertaken a job that has got to be done and we may well be thankful that the opportunity has at last come to this country as a nation in a great common cause and fight for freedom.

As I am writing this page at the beginning of the new year, I do not feel like looking back and reminiscing about the past. My thoughts are full of hope for the future, with confidence that we shall find the way, not only to win the war, but to meet the problems that will follow.

In that sense I can wish my many old and new friends in Textile World a Happy New Year!

HENRY G. LORD, *founder of Textile World and president, Bragdon, Lord & Nagle Division, McGraw-Hill Publishing Co.*

NEOLAN

★ ★ YELLOW BE ★ ★
★ YELLOW GR Conc. ★
★ BORDEAUX RM ★

NEOLAN

★ ★ ORANGE R ★ ★
★ ★ ORANGE G ★ ★
★ BLACK WA Ex. Conc. ★

NEOLAN

★ ★ BLUE 2G ★ ★
★ NAVY BLUE RLG Conc. ★
★ NAVY BLUE 4RL Conc. ★

Dyestuffs of Distinction

FOR YOUR DEFENSE!

INSURE the color life of your woolens with Neolans . . . with a simple dyeing procedure Neolans provide good all around color fastness and a cloth free from harshness. They may be the answer to your dyeing problem.

THE CIBA LABORATORY
Exists to Serve You
Ciba Chemists, Colorists and Service Technicians are ready at all times to co-operate with you in the solution of your problems. Please feel free to call upon them.

Company Incorporated **CIBA**

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Vat Dyes of · THE DOW CHEMICAL COMPANY

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GREENWICH & MORTON STS.
NEW YORK

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PROVIDENCE · SAN FRANCISCO · PHILADELPHIA

Cut your replacement costs!

Over
ONE MILLION
rings with
Vitritex Finish
are now in
Daily Use

PAWTUCKET RINGS *Vitritex* FINISH

Resist wear — give your travelers long-lived performance

The initial outlay for new rings represents but a part of their ***actual*** cost. In determining ***real*** costs, other factors far more important, cannot be ignored. Maintenance, upkeep, length of service and quality of production will either increase or reduce ring costs.

When these points are considered Pawtucket Rings are found to pay for themselves. They are made by an exclusive time-tested process, and with the famous Vitritex Finish. Pawtucket Rings have the hardness of granite, the smoothness of glass—are tarnish resistant and almost impervious to wear.

You can prove these qualities for yourself. We will gladly furnish samples at no charge, from which you can conduct your own tests within your own mill.

GIVE YOUR TRAVELERS "A TURN FOR THE BETTER"

Pawtucket SPINNING RING COMPANY • CENTRAL FALLS, RHODE ISLAND
(Subsidiary of Saco-Lowell Shops)

CHECK pH WITH THIS HANDY CALCO INDICATOR!

The amount of fluctuation in the pH measure of alkalinity or acidity is a matter of increasing importance in dyeing many different fibres. These fluctuations have explained many variable results that were not accounted for in the past.

This handy Calco pH indicator will assist in determining quickly the relative pH in your operations from day to day. It fits the pocket, yet the transparent plastic case effectively protects its contents against the action of fumes and moisture. Refills of indicator paper are easily inserted.

We are glad to make this indicator available to our friends throughout the Textile Industry. It is but one of the many practical ways in which we are trying to assist Calco customers to make the most of available materials and their own time.

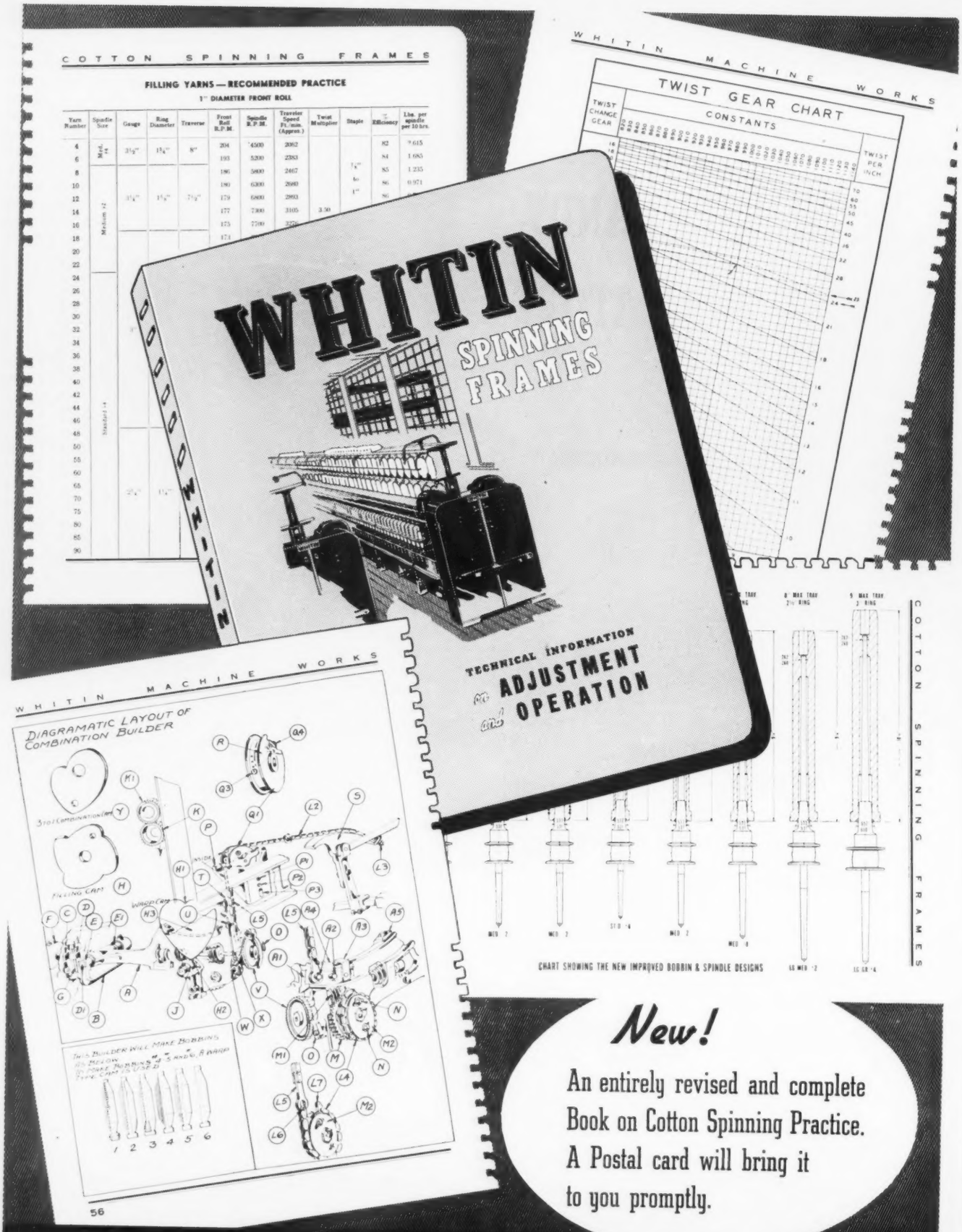
You can obtain one of these indicators without charge simply by asking your regular Calco representative on his next call. Please do *not* request one by mail or phone.

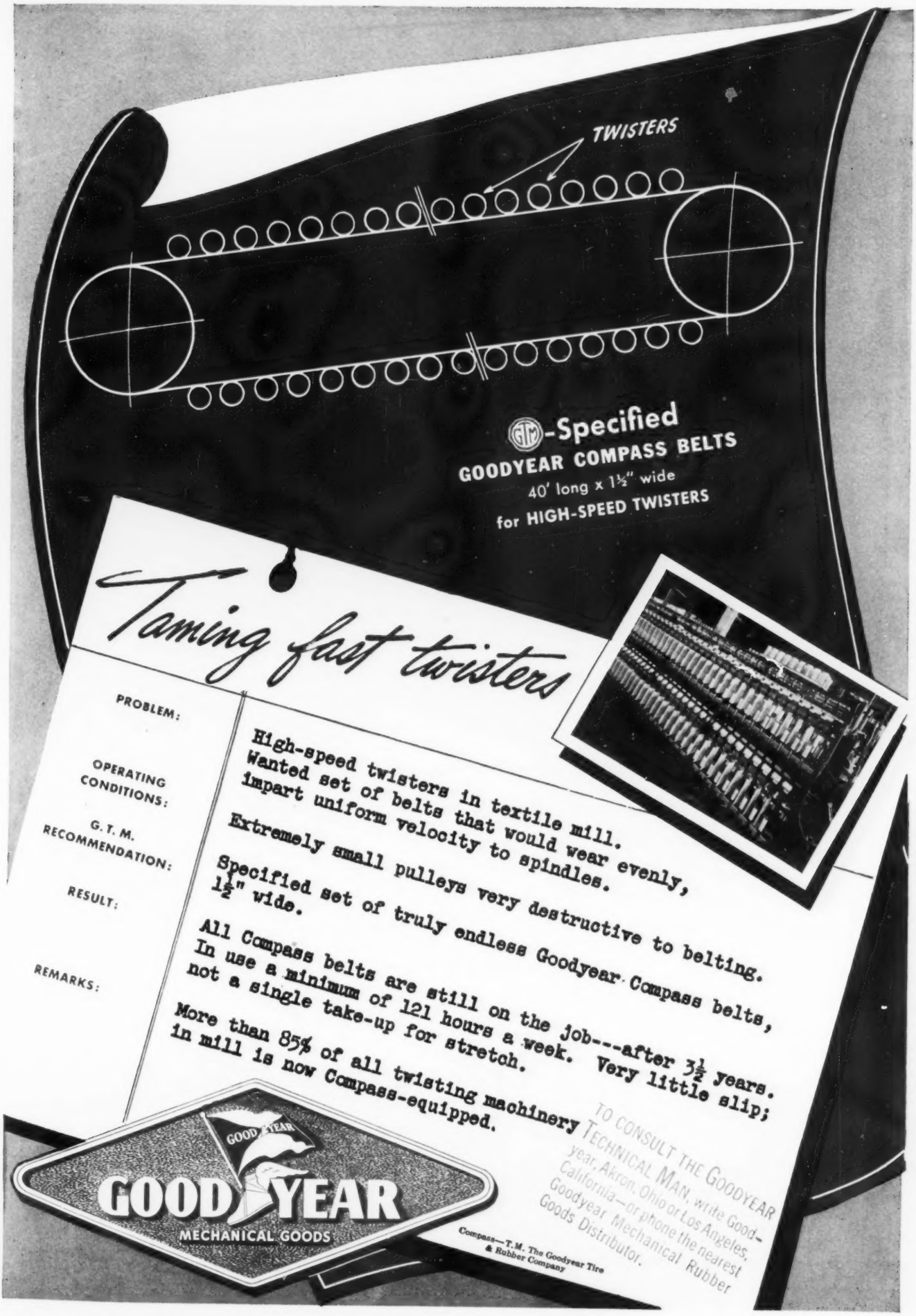
Calco Dyes are Better Buys

Calco

CALCO CHEMICAL DIVISION
AMERICAN CYANAMID COMPANY
Bound Brook, New Jersey

Boston · Philadelphia · Providence · New York · Charlotte · Chicago


COTTON SPINNING FRAMES
FILLING YARNS — RECOMMENDED PRACTICE
1" DIAMETER FRONT ROLL
WHITIN MACHINE WORKS
TWIST GEAR CHART
CONSTANTS
TWIST PER INCH
WHITIN
SPINNING FRAMES
TECHNICAL INFORMATION
ADJUSTMENT
OPERATION
WHITIN MACHINE WORKS
DIAGRAMATIC LAYOUT OF COMBINATION BUILDER
CHART SHOWING THE NEW IMPROVED BOBBIN & SPINDLE DESIGNS
COTTON SPINNING FRAMES
56
New!
An entirely revised and complete Book on Cotton Spinning Practice. A Postal card will bring it to you promptly.
WHITIN MACHINE WORKS
WHITINSVILLE, MASS., U. S. A.
CHARLOTTE, N. C.
ATLANTA, GA.


TWISTERS
GTM-Specified
GOODYEAR COMPASS BELTS
40' long x 1½" wide
for HIGH-SPEED TWISTERS
Taming fast twisters
PROBLEM:
High-speed twisters in textile mill. Wanted set of belts that would wear evenly, impart uniform velocity to spindles.
OPERATING CONDITIONS:
Extremely small pulleys very destructive to belting.
G. T. M. RECOMMENDATION:
Specified set of truly endless Goodyear Compass belts, 1½" wide.
RESULT:
All Compass belts are still on the job---after 3½ years. In use a minimum of 121 hours a week. Very little slip; not a single take-up for stretch.
REMARKS:
More than 85% of all twisting machinery in mill is now Compass-equipped.
GOODYEAR
MECHANICAL GOODS
TO CONSULT THE GOODYEAR TECHNICAL MAN, write Goodyear, Akron, Ohio or Los Angeles, California—or phone the nearest Goodyear Mechanical Rubber Goods Distributor.
Compass—T. M. The Goodyear Tire & Rubber Company

A photomicrograph of a knot woven into fabric.

Tumor!

Knots in fabric—*textile tumors*—are as malignant and incurable as the worst tumor known to medicine. But, unlike medicine, a preventive has been found for them.

Knot troubles go back to the yarn. They are in the yarn when delivered to the mill or the mill puts them in when the yarn breaks. Every broken filament, every weak spot may ultimately produce a knot.

Industrial solved the problem by developing "The Continuous Process," an entirely new method of manufacture. By this method Spun-lo yarn is spun, bleached, dried, treated and twisted as a single thread in continuous operations without once being touched by human hand. As a result, it is uniform in strength and virtually free from knots and broken filaments.

"Tumors" and other mill diseases are being prevented by this yarn that makes better fabric and fewer seconds with greater efficiency and lower production costs.

Write for your copy of the booklet "Uniformity Rides the Reels", which describes the "continuous process" in detail.

"Continuous Process"

Spun-lo Rayon

Reg. U. S. Pat. Off

INDUSTRIAL RAYON CORPORATION • CLEVELAND, OHIO

NEW YORK OFFICE • 500 FIFTH AVENUE

Machining Speeds up to several thousand feet per minute, deeper cuts, heavier feeds, and often with longer tool life; there's a faster tempo to metal-working operations when your plant is processing Mazlo Magnesium Products. Thus is Magnesium helping to speed the production of vital defense materials.

Standard metal-working practices are followed with Magnesium. It takes a smooth finish and tolerances can be held to close limits. A wealth of helpful information—recommended tool rakes and clearances, cutting speeds and feeds, and similar data—is now available on the working of Magnesium.

What is being learned today about the fabrication of Mazlo Magnesium Alloy Products will be available tomorrow for peacetime production. Then, all users of this lightest of lightweight metals—Magnesium—will profit by today's gigantic push for production. Sales Agent for Mazlo Magnesium Products: Aluminum Company of America, 1705 Gulf Bldg., Pittsburgh.

AMERICAN MAGNESIUM CORPORATION

SUBSIDIARY OF ALUMINUM COMPANY OF AMERICA

MAZLO MAGNESIUM PRODUCTS

GET THEE BEHIND ME, SATAN!

SURE, it's a temptation, during these times when we can't even produce enough yarn to satisfy the market's requirements—it's a temptation to cut out all activities not directly connected with the production of rayon yarn and fiber and abandon fiber research, fabric development, mill technique, and sales assistance.

But no, we're not going to discontinue any of those services which you've come to associate with American Viscose Corporation. If anything, we're stepping up our service facilities, expanding our research and development work, so that we may be of even greater value to you in the future. And if you'll just pause from your worries about war, prices, shortages, and inflation, we think you'll agree this is a sound policy.

During these troublous times, our research men will be marching steadily ahead, delving into the ideas that will be tomorrow's new fabrics and new production methods. And when conditions return to normal, they'll be ready to give you just the help you need. You'll be thankful then, that we are continuing our research now!

Copr. 1942—American Viscose Corp.

CROWN TESTED AND APPROVED RAYON FABRIC
TRADE MARK REG. U.S. PAT. OFF.

AMERICAN VISCOSE CORPORATION

World's Largest Producer of Rayon Yarn

SALES OFFICES: New York, N. Y.; Charlotte, N. C.; Providence, R. I.; Philadelphia, Pa.
PLANTS AT: Marcus Hook, Pa.; Parkersburg, W. Va.; Roanoke, Va.; Lewistown, Pa.; Nitro, W. Va.; Meadville, Pa.; Front Royal, Va.

It's READY NOW! Improved Fluorescent Lighting to Increase the Nation's Victory Production!

BENJAMIN'S NEW TYPE "RF" FLUORESCENT LIGHTING UNITS give these four outstanding operating advantages:

MORE LIGHT FOR POWER CONSUMED . . .

NEW SOLUTION TO THE FLICKER PROBLEM . . .

QUICKER, SURER STARTING WITHOUT SWITCHES . . .

REDUCED INSTALLATION AND MAINTENANCE COSTS!

Even more satisfactory fluorescent lighting is now possible because of the development of the new "RF" (rectified fluorescent) lamp and the new "RF" Lighting Unit which Benjamin has engineered to take maximum advantage of this new lamp's many superiorities.

IMPROVED LIGHTING EFFICIENCY

With the new Benjamin "RF" Units, it is now possible to secure with greater economy* the higher illumination levels required by National Defense production. The full wave, rectifier type circuit employed in these units, so effectively minimizes flicker and stroboscopic effect at the source without the need for special balancing devices in the circuit, that now even single lamp units can be employed satisfactorily in many installations.

LOWER INSTALLATION COSTS

Greater freedom from operating failure is assured by the elimination of separate starters! Lower cost installation is made possible by certain Benjamin constructional features and the fact that, in many cases, the present wiring will prove adequate.

INCREASES SCOPE OF FLUORESCENT LIGHTING

Because of the high lighting efficiency of the "RF" Lamp, the design and high (79%) reflection factor of the Benjamin type "RF" Unit, it is now practical to use fluorescent lighting in locations where high mounting and wide spacing is required.

FULLY WARRANTED

Benjamin "RF" Units conform to the highest standards of performance, efficiency and durability. They carry the Label of Underwriters' Laboratories, and the Benjamin Warranty. The reflector section is built of heavy gauge, easily cleaned, Benjamin lifetime porcelain enamel steel . . . with that extra safety factor of strength and durability so essential to industrial requirements.

WRITE FOR SPECIAL BULLETIN

Just off the press is the Benjamin Bulletin on Type "RF" Equipment. Plants engaged in Defense Production should write for this bulletin immediately so that they may make plans now to utilize this equipment at the earliest possible time. Address Benjamin Electric Mfg. Co., Dept. EE, Des Plaines, Illinois.

*Twin lamp units on 10x10 ft. spacings provide 35 to 40 footcandles of general illumination (under favorable room conditions) with a total power consumption of approximately 200 watts.

BENJAMIN TRADE MARK

World Leader in Industrial

LIGHTING EQUIPMENT

DISTRIBUTED EXCLUSIVELY THROUGH ELECTRICAL WHOLESALERS

Service Story for 1942—

Celanese* fabrics

1 Celanese fabrics are economical to own, pleasant to wear.

2 All-Celanese fabrics do not shrink, stretch or sag.

3 Celanese taffetas do not split or crack.

4 Celanese is not affected by perspiration.

5 All-Celanese fabrics do not absorb or retain body odors.

6 Celanese will not mold or rot.

7 Celanese fabrics are cool in summer and warm in winter because they allow evaporation and do not get soggy.

8 The smoothness of Celanese yarn repels dust, soot and grit—Celanese fabric needs fewer cleanings than other fabrics.

9 All-Celanese fabrics launder easily—dirt and common stains do not penetrate Celanese yarn.

10 Celanese dries quickly.

11 Celanese fabrics dry clean perfectly.

12 Celanese colors are exceptionally fast.

13 Celanese white never turns yellow.

14 Celanese fabrics are not affected by sea air or salt water.

15 Celanese moires are permanent.

16 Celanese fabrics drape beautifully.

17 Celanese fabrics tailor superbly, hold their pleats.

18 Celanese fabrics are constructed to hold at the seams.

19 Celanese has high resiliency.

20 Celanese fabrics are crease-resistant—wrinkles from normal wear disappear on hanging overnight.

21 Celanese is a natural insulator.

22 Celanese fabrics feel better and wear better.

23 Celanese fabrics contain no weighting.

24 All-Celanese fabrics retain their beauty, hand and resiliency through repeated launderings—"*The More You Wash It, The Better It Feels.*"

25 The properties of Celanese are inherent in the yarn and do not depend on special finishes.

Celanese goes on the Air!

"GREAT MOMENTS IN MUSIC"
EACH WEDNESDAY 10:15 TO 10:45 P.M., E.S.T.
COLUMBIA NETWORK COAST-TO-COAST
STARTING JANUARY 7TH

CELANESE CORPORATION OF AMERICA
180 Madison Avenue, New York City

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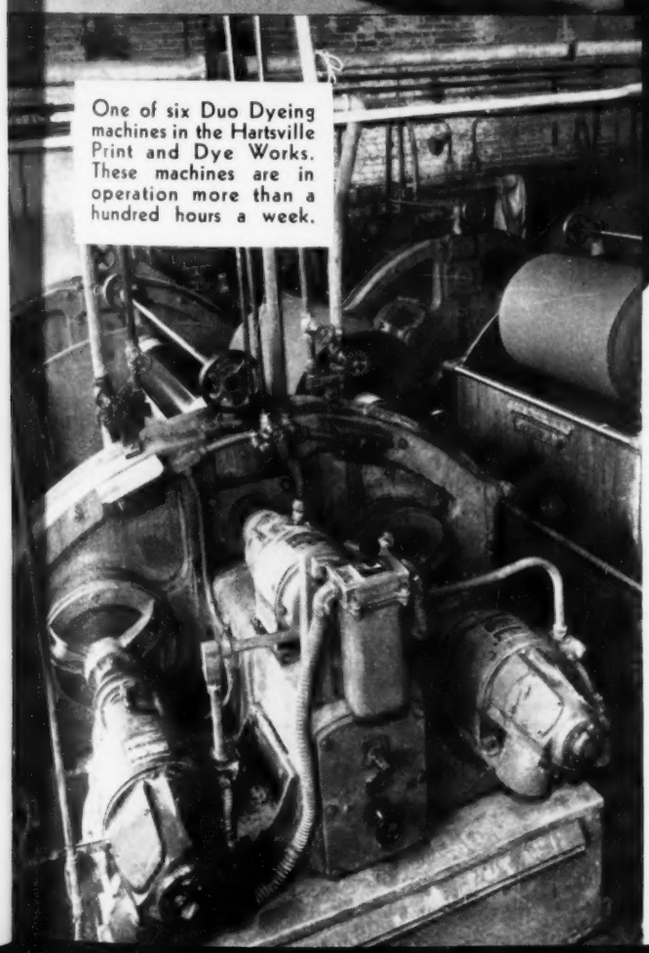
*Reg. U. S. Pat. Off.

Under a current ruling of the Federal Trade Commission, **CELANESE** Yarns and Fabrics are classified as **RAYON**

She never saw a dye jig but she's your toughest dyeing inspector

REDUCE REJECTS AND DOUBLE YOUR OUTPUT WITH THIS NEW G-E EQUIPPED DUO DYEING MACHINE



One of six Duo Dyeing machines in the Hartsville Print and Dye Works. These machines are in operation more than a hundred hours a week.

WHEN ENGINEERS of the Duo Dyeing Machine Company of Charlotte, N. C., set out to design their new dyeing jig, they had two things in mind. They wanted to build a machine that would virtually double the output of existing machines and, at the same time, would cut down the percentage of rejects due to uneven dyeing tension.

To increase dyeing output, they designed a machine employing two separate compartments so that the cloth would receive two dyeing treatments in passing from one roll to the other.

But that was only the answer to half their problem. They still needed a dyeing drive that would keep constant tension on the cloth throughout the entire dyeing process. Realizing that mechanical drive, even when constantly attended by an expert operator, may produce a high percentage of rejects, they turned to electric drive.

General Electric application engineers were called in. After studying the problem, they designed a brand new dyeing drive. Motors and control are so co-ordinated that uniform tension on the cloth from the first to the last yard is assured. One skilled operator can now attend several machines. Again, the skillful application of electricity results in a better product at less cost.

We invite you to use our engineering service. And we urge you to investigate this all-electric dyeing drive. Contact our nearest office or write direct to *General Electric, Schenectady, N. Y.*

GENERAL ELECTRIC

L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
NEW YORK, N. Y.

Telephone: AShland 4-8650

FACTORS

For Manufacturers and Merchants

Inquiries as to our services solicited

●

ESTABLISHED 1840

Style . . . fit . . . durability — these are the qualities the customer sees. But all of these qualities depend to a great extent upon ***knitting.*** Torrington Needles, the machine-made needles, will help you obtain that flawless knitting which is a basic element in successful merchandising. Whatever type of product your mill produces, there's a Torrington Needle for your special purposes. Give ***all*** your work the benefit of Torrington quality knitting.

TORRINGTON latch NEEDLES

The Torrington Company, Torrington, Conn., U. S. A., Established 1866 • Branches: New York • Philadelphia • Chicago • Boston • Greensboro, N. C.
St. Louis • Toronto • Factories at: Torrington, Conn. • Orange, Mass. • Bedford, Quebec • Coventry, England • Aachen, Germany

AVAILABLE FOR PROMPT DELIVERY

With production schedules constantly endangered by non-delivery of essential materials, the elimination of even one such problem is a valuable aid in maintaining maximum output. Torrington Needle Bearings are available for *prompt* shipment on your priority orders!

Right from the start, steadily rising sales curves reflected industry's immediate recognition of the Needle Bearing's advantages. Long before defense requirements brought increasing demands for most industrial materials, The Torrington Company was prompted to expand production capacity again and again, to anticipate growing use of the Needle Bearing. So broad was this expansion program, initiated in the light of the Bearing's demonstrated potentialities in normal times and its acceptance by so many of the country's leading engineers, that it has proved sufficiently flexible to care for the abnormal requirements of the present.

Manufacturers of aircraft, automotive equipment, textile machinery, farm implements, electrical apparatus, and many other products have put the Needle Bearing to work in thousands of applications, because of such conspicuous features as low cost, small size, high capacity, ease of installation, efficient lubrication. And today the Needle Bearing has a new and even more important appeal—its ready availability to the makers of defense equipment and machines.

Textile equipment manufacturers working on priority orders can avoid delays by incorporating the Needle Bearing in their designs *now,* and can profit as well by its adaptability to a wide range of bearing problems. Torrington engineers will be glad to work with machinery manufacturers in incorporating the advantages of the Needle Bearing in their designs. For full details on this unusual bearing, write for Catalog No. 116.

THE TORRINGTON COMPANY · ESTABLISHED 1866
TORRINGTON, CONNECTICUT, U. S. A.
Makers of Needle and Ball Bearings
New York Boston Philadelphia Detroit Cleveland Seattle
Chicago Los Angeles San Francisco Toronto London, England

TORRINGTON NEEDLE BEARING

VITAL TO DEFENSE ☆ ☆ ☆

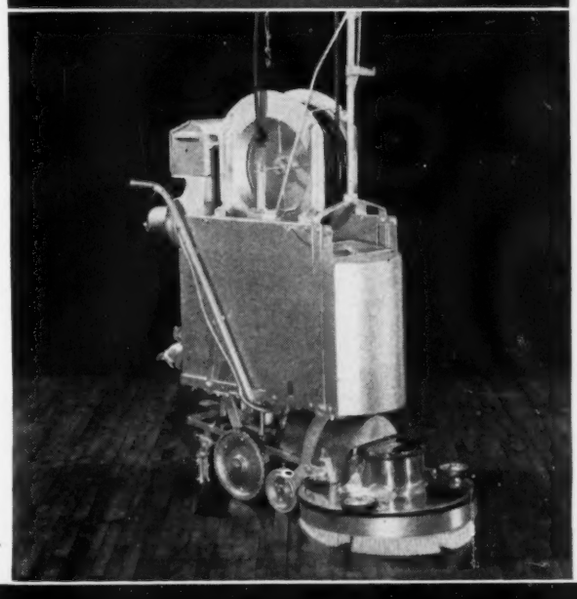
CLEAN, *Safe* FLOORS *for Workers*

In your efforts to help conserve the Nation's man-power through intensified accident prevention programs, you won't want to overlook the fact that approximately 18% of all industrial injuries were the result of falls (according to *Accident Facts*, 1941) . . . due to slippery floors and other causes.

Are you satisfied that the floor-maintenance equipment you are now using is adequate to your present needs? Is it capable of thoroughly removing oil and other slippery substances, as well as dirt, et cetera?

When it comes to solving individual floor-maintenance problems, *Finnell* can be of real service to you. With equipment in a range of models and sizes that meets the varied requirements of *all* the industries served, *Finnell* is prepared to give you dependable, unbiased advice as to the type and size machine that's right for *your specific needs.*

NOW IS THE TIME to check up on your floor-maintenance equipment, Without obligating you in any way, the nearby *Finnell* man will be glad to help you. For free floor survey, consultation, demonstration, or literature, phone nearest *Finnell* branch, or write Finnell System, Inc., 1901 East Street, Elkhart, Indiana.



FINNELL SYSTEM, INC.

Pioneers and Specialists in FLOOR MAINTENANCE EQUIPMENT

Rayon Staple

. . . HANDLE THIS NEW BABY CAREFULLY

Rayon staple is still in its infancy. Therefore it pays to utilize all the experience available in handling it. This applies particularly to carding which determines to a large extent the quality and economy of subsequent operations.

Ashworth offers you the following 4 POINT PROGRAM to minimize mistakes and improve results:—

1. **Consult one of our practical service men. The carding of rayon staple presents many unusual problems which he can help you solve.**
2. **Use our modern experimental laboratory equipped with the three standard makes of cotton cards. You can work out your problems here in a practical way, without holding up your mill production.**
3. **Use our metallic feed roll which maintains a firm hold on the lap, assuring even feeding and thereby reducing cylinder jams.**
4. **Install our specially developed lickerin wire for rayon cards.**

ASHWORTH

PIONEERS IN CARD CLOTHING . . . *ASHWORTH BROS., INC.*

Woolen Div. AMERICAN CARD CLOTHING CO.

3 FACTORIES FALL RIVER, WORCESTER, PHILADELPHIA

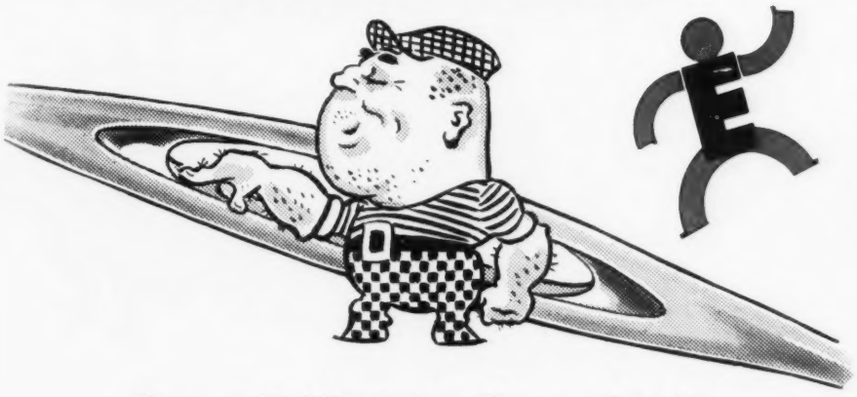
6 REPAIR SHOPS FALL RIVER, PHILADELPHIA, CHARLOTTE, GREENVILLE, ATLANTA, DALLAS

7 DISTRIBUTING POINTS FALL RIVER, WORCESTER, PHILADELPHIA, CHARLOTTE, GREENVILLE, ATLANTA, DALLAS

SOUTHWESTERN REPRESENTATIVE: • TEXTILE SUPPLY CO., DALLAS, TEXAS

PRODUCTS AND SERVICES: Card Clothing for Cotton, Wool, Worsted, Silk and Asbestos Cards and for all Types of Napping Machinery • Brusher Clothing and Card Clothing for Special Purposes • Lickerin Wire and Garnet Wire • Sole Distributors for Platt's Metallic Wire • Lickerins and Top Flats Reclothed

TOUGH, BUT NOT ROUGH



Emmons Heddles Reduce Weaving Variables

Writing "Emmons" in front of your order for steel heddles is a simple way to reduce warp breaks and cut replacement costs.

Emmons "Certified" Steel Heddles are watched carefully throughout manufacture to insure the qualities that mean gentle handling of the yarn and greatest resistance to wear — smoothness of eye, high tensile strength, corrosion resistance.

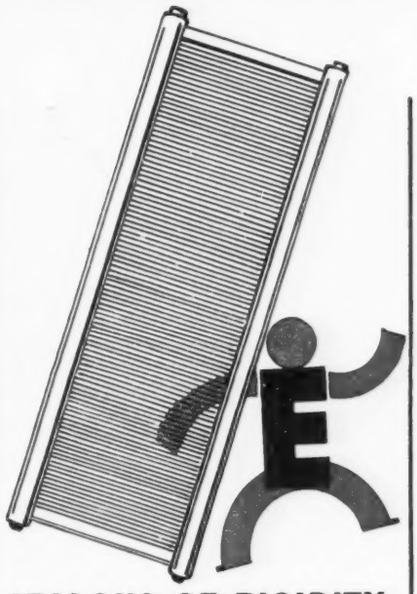
In addition to final tests to earn our "Inspected and Approved" seal, sample heddles are periodically examined by a famous testing laboratory.

Result: a heddle that is tough when it comes to wear, but never rough to yarn. You can expect greater freedom from roughed-up yarn, less "fly," longer periods between replacements.

Be Certain . . . Buy Certified

EMMONS LOOM HARNESS COMPANY
Lawrence, Massachusetts . . . . Charlotte, North Carolina

GENEROUS TO YARN



JEALOUS OF RIGIDITY

You get all the air space your yarn needs in an Emmons Reed — up to 70% if you want it. Yet there's no loss of strength or rigidity, because as the reed wires decrease in *thickness*, they are *increased* in *width*.

This air space is accurately measured to .01", so you won't get reedy cloth. And dent thickness is controlled within .001" — you get uniform, super-smoothness that can't help but result in better-quality work.

All Emmons products are shipped only when the tests of an Emmons Inspector have proved them deserving of this seal.

EMMONS

WORKS FAST

WITHOUT JITTERS

If you've ever had a heddle frame buckle or bind at high speeds, you'll appreciate the strong construction of Emmons Heddle Frames. Rolled rivets provide extra strength where it is really needed. We use more than the usual number of rivets, too.

EMMONS

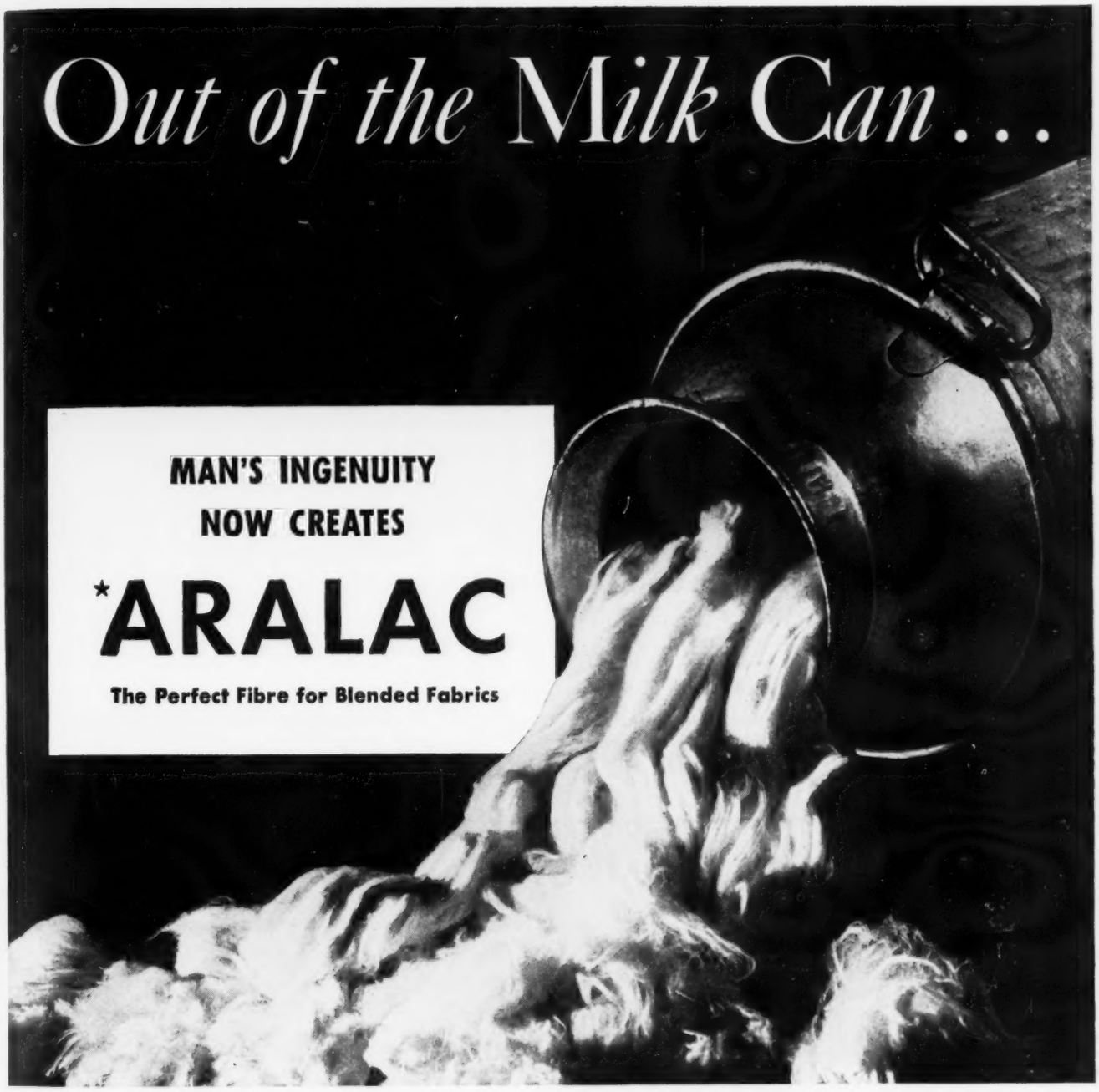
Lawrence, Mass. and Charlotte, N. C. All products stocked in Charlotte and Lawrence. Reeds manufactured in Charlotte. Branch offices: Clifton Watson, Manager of Southern Sales, Box 2036, Charlotte (Tel. Charlotte 3-7503) . . . Arthur Harris, Box 1982, Atlanta (Tel. Main 2643) . . . Alvin Braley, Box 236, Itasca, Tex. (Tel. 170) . . . W. S. Taylor, 171 Madison Ave., New York (Tel. Lexington 2-6060) . . . Albert R. Breen, 80 East Jackson Blvd., Chicago (Tel. Harrison 7140).

Argentina, Buenos Aires, Roberto Zander, 345 Juan Jaures; *Brazil*, Rio de Janeiro, A. Polak, Caixa Postal 362; *Chile*, Santiago, W. L. Robinson, Casilla 1570, Valparaiso; *Cuba*, Havana, J. M. Perez-Pena, Box 1611; *Mexico*, Mexico, D. F. Leo Lenk, Apartado 533; *Colombia*, Medellin, C. E. Halaby & Co., P. O. Box 139.

See latest TEXTILE WORLD YEARBOOK for Details on all Emmons Products.

There's Thrifty Lubrication in every drop
SHELL TEXTILE OILS
KEEPING up with tight production schedules is wearing enough without your having to worry about safe lubrication of your machines. That's why you'll appreciate the outstanding qualities of Shell Textile Oils.
Instead of 3 or 4 oils covering a score of lubricating uses, Shell scientists have designed a specific oil for each type of textile-machine lubrication.
•
CALL IN THE SHELL MAN NOW. Let him show you how to get the most from your lubricants without sacrificing the quality of your goods. His unbiased recommendations will be made without obligation.
SHELL

Out of the Milk Can . . .



MAN'S INGENUITY NOW CREATES

★ARALAC

The Perfect Fibre for Blended Fabrics

Man again wrests from nature a secret of her fundamental chemistry. And a new frontier of technical development opens on limitless horizons. To the textile experts of America we offer ARALAC—a new fibre possessing possibilities so varied and so extensive that even we who make it have not as yet fully explored their far-flung reaches.

Produced from milk casein—ARALAC is a protein fibre, just as wool, alpaca, camel's hair and fur are protein fibres. At the same time it attains characteristics individually its own. It combines the insulating and absorption properties of wool with the gentleness of down—yet converts into workable yarns. Already employed in limited fields, ARALAC stands ready to serve a far wider world. We invite the cooperation of the nation's technicians in achieving its full possibilities.

★ Trade Mark Reg. U. S. Patent Office

ARALAC, INC.

Taftville, Connecticut

ARALAC, produced by a division of NATIONAL DAIRY PRODUCTS CORPORATION, represents but one of the many contributions this nation-wide organization is making toward the more efficient utilization of America's agricultural resources.

"LOOK OUT FOR STATIC!

It means slow starting of cards, repulsion of fibres, uneven yarns—a lot of troubles that waste your time and spoil your quality!"

"LOOK OUT FOR EXCESS HUMIDITY!

It costs you an unnecessary amount of time and money . . . and makes unhealthy working conditions in your mill!"

"Stop right there! I've discovered the safe, sure, scientific way to get efficient operation of our machines *regardless of temperature and excess humidity.*"

CHAPMAN STATIC NEUTRALIZERS

Guaranteed to remove static electricity, *instantly.*

A simple application of a well-known scientific principle — just a power unit connected with inductor bars.

SAFE, FREE FROM SHOCK — on the List of Inspected Electrical Appliances of the Underwriters' Laboratories of the National Board of Fire Underwriters.

ECONOMICAL—they cost little more to operate than an ordinary light bulb.

It's no wonder 16,000 of them are now in use. 8,000 in textile industries!

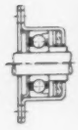
For more facts—experiences of users—or a trial installation, write today to the sole sales agents: Kidder Press Company, Inc., Dover, N. H.; Chrysler Building, New York; Fisher Building, Chicago. On Pacific Coast: H. W. Brintnall Company, 430 Howard Street, San Francisco.

Ten Strike for TECA*

In bowling shirts . . . in men's sportswear of every type . . . Teca is the top-scoring favorite for 1942. This crimped acetate rayon fiber has everything it takes to chalk up record sales. **Vitality** . . . Teca's crimp provides lively resistance to crushing and bagging. **Comfort** . . . Teca textures are rich and soft, non-irritating to the skin. **Shrinkage-control** . . . Teca's low moisture absorption tends to stabilize a weave, which is why Teca Blends were the first spun rayons approved by the American Institute of Laundering. Already, the majority of makers of men's summer suits, sports shirts, slacks, leisure jackets and lounging robes have adopted Teca fabrics for their 1942 lines.

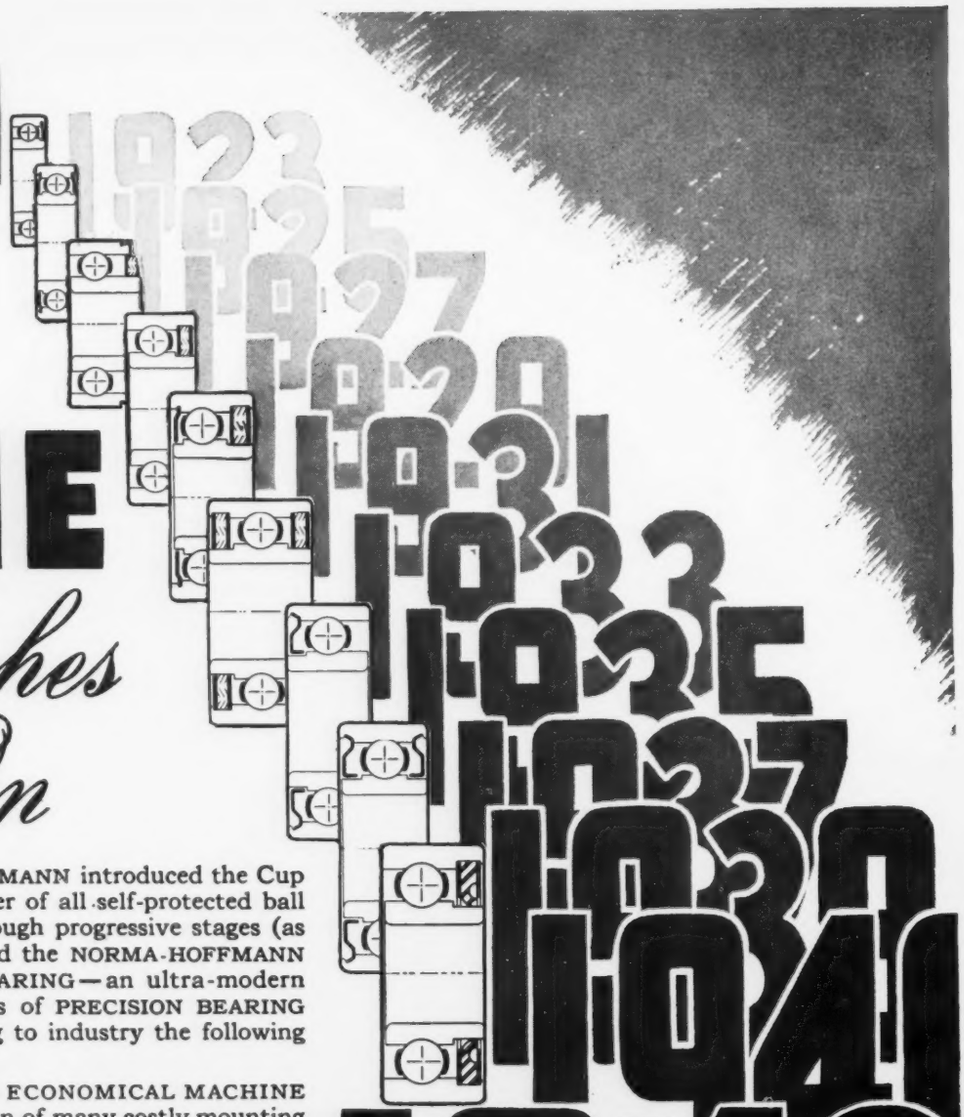
* *Eastman*
CRIMPED ACETATE RAYON

A. M. TENNEY ASSOCIATES, INC., 10 E. 40TH ST., N.Y.C., SALES REPRESENTATIVES
FOR TENNESSEE EASTMAN CORPORATION, SUBSIDIARY OF EASTMAN KODAK CO.



1921

TIME *Marches On*



In 1921, NORMA-HOFFMANN introduced the Cup Mounting—the forerunner of all self-protected ball bearings. From this, through progressive stages (as shown above) has evolved the NORMA-HOFFMANN "CARTRIDGE" BALL BEARING—an ultra-modern type embodying 30 years of PRECISION BEARING manufacture and offering to industry the following distinctive advantages:

SIMPLER AND MORE ECONOMICAL MACHINE DESIGN, due to elimination of many costly mounting parts and machining operations, otherwise required; EASIER AND FASTER MACHINE ASSEMBLY AND DISASSEMBLY, since the "CARTRIDGE" BEARING is an integrally sealed unit needing no complementary mounting parts; 100% GREATER GREASE CAPACITY, due to double-row width creating a greatly enlarged grease reservoir; COMPLETE AND LASTING EXCLUSION OF DIRT AND FOREIGN MATTER by the use of tightly fitting, wearless, all-metal seals; SEALED FOR ANY POSITION, since the seals retain the lubricant regardless of shaft angle; EASY REGREASING AND INSPECTION WITHOUT DISMOUNTING, by means of refilling plug and removable seals.

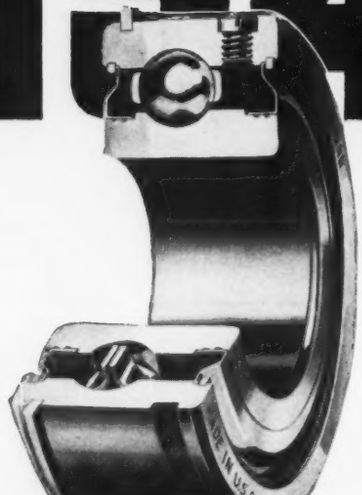
Write for the Catalog. Submit your bearing problems for study and recommendation, without obligation. NORMA-HOFFMANN sales and service engineers, and distributors in principal cities stocking "CARTRIDGE" BEARINGS, are at your service.

"NORMA-HOFFMANN"

CARTRIDGE

BALL BEARING

PRECISION BALL, ROLLER and THRUST BEARINGS



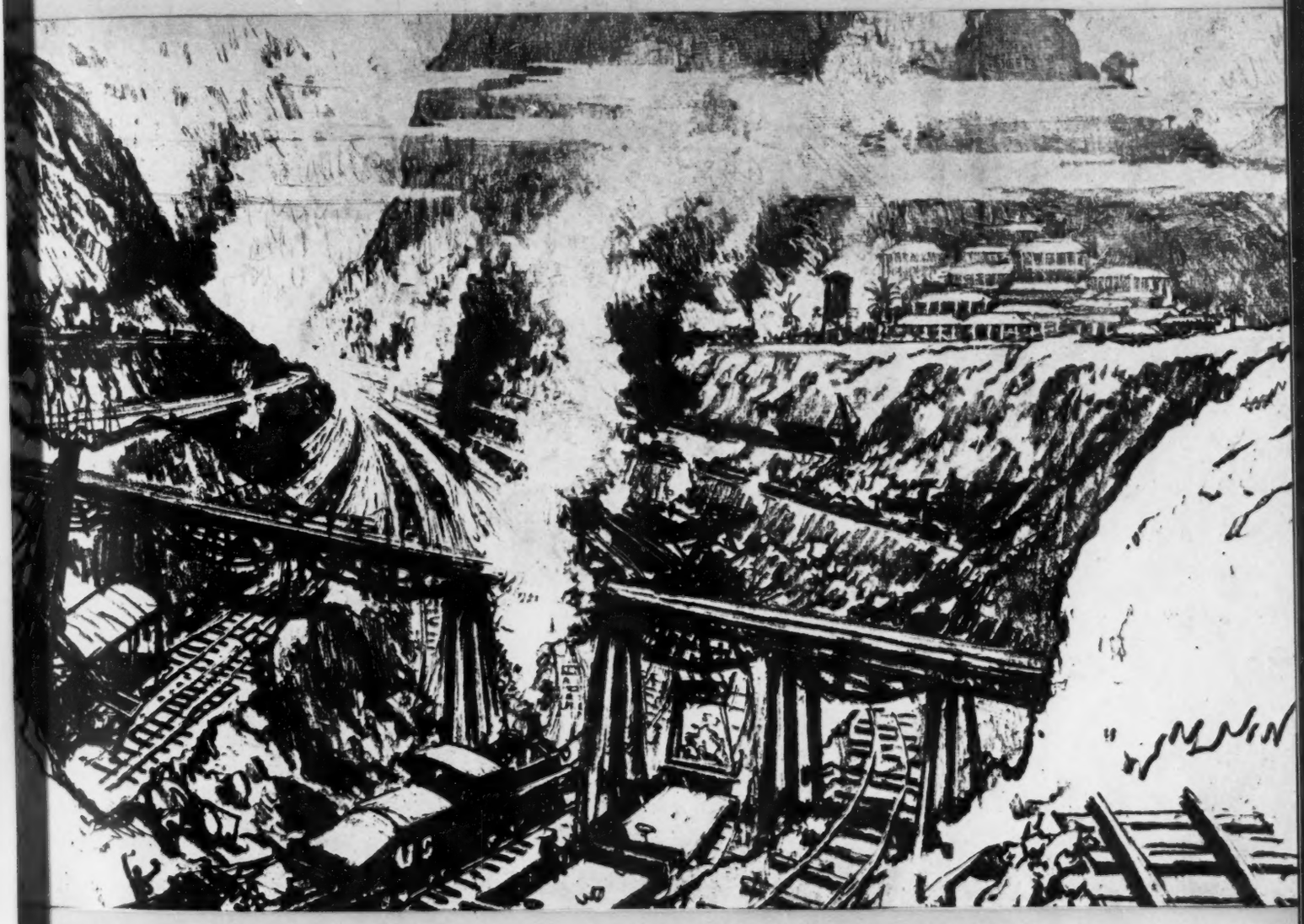
NORMA-HOFFMANN BEARINGS CORP'N., STAMFORD, CONN., U.S.A. • FOUNDED 1911

HAD THE PURPOSE been merely to unite two great bodies of water, the Panama Canal in all probability would never have been built. Instead, it was the dream of far-sighted men to achieve a new and greater service for the commerce of man by building this waterway that would join the Atlantic and the Pacific Oceans.

Similarly, two companies, each great in its own right, may enlarge their usefulness by establishing a union between their respective enterprises.

A TESTAMENT TO PROGRESS AND SERVICE...

"THE CUT AT PARAISO." LITHOGRAPH BY JOSEPH PENNELL. REPRODUCED BY PERMISSION OF THE LIBRARY OF CONGRESS, WASHINGTON, D



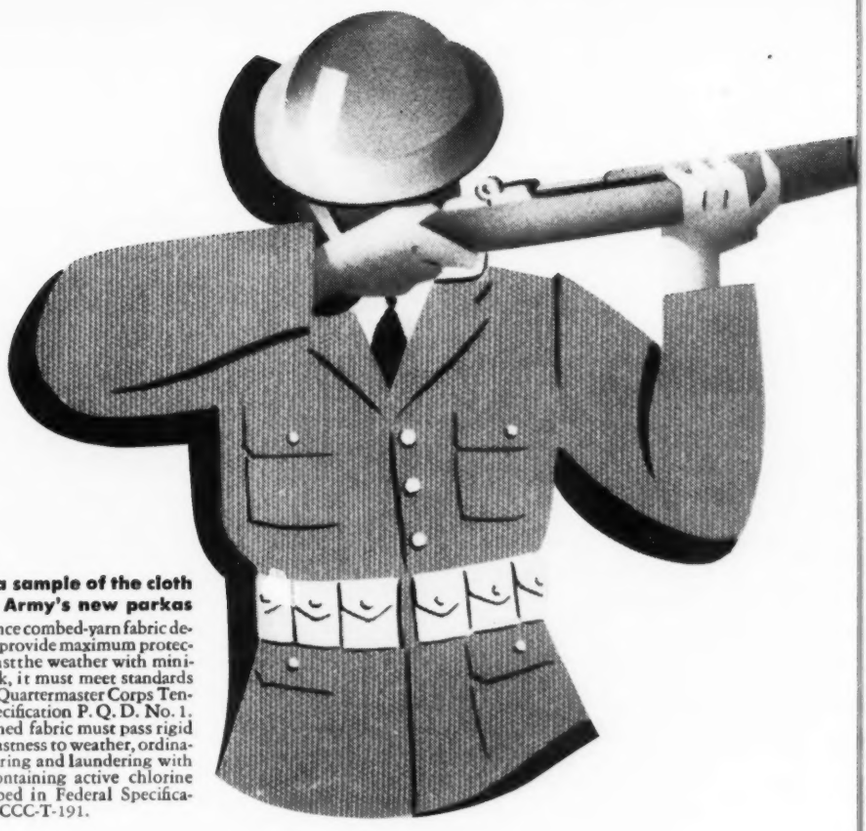
With the Niagara Alkali Company, the Electro Bleaching Gas Company has now been combined to form a single, but larger institution in the fields of chemical manufacture and research.

The Niagara Alkali Company pledges to sustain the high quality and integrity of the products of its manufacture as heretofore. At the same time, the Niagara Alkali Company will be able to extend to old customers the new and greater service that is made possible by broadened facilities, expanded resources, and experience.

Niagara
ALKALI COMPANY
60 EAST 42nd STREET, NEW YORK, N. Y.

CAUSTIC POTASH · CAUSTIC SODA
PARA · CARBONATE OF POTASH
Liquid Chlorine

EBG NIAGARA ALKALI COMPANY



Here's a sample of the cloth for the Army's new parkas

A five-ounce combed-yarn fabric designed to provide maximum protection against the weather with minimum bulk, it must meet standards set up in Quartermaster Corps Tentative Specification P. Q. D. No. 1. The finished fabric must pass rigid tests for fastness to weather, ordinary laundering and laundering with agents containing active chlorine as described in Federal Specification No. CCC-T-191.

Fabrics for Combat Require the Best

America's textile industries are answering the call—the call of the armed services for top-quality fabrics such as this wind-resistant, lightweight, low-bulk material for the parkas and jackets added to the Army's garb last summer. Fighting men require the best, and American mills are giving it to them in unprecedented quantities.

Behind the tremendous effort of manufacturers of combat fabrics lie the resources, experience and organizations of suppliers of the thousands of things that make textile production possible—machinery, natural and synthetic fibers and chemicals.

Typical of these organizations is Monsanto—a leading supplier of 27 different chemical materials used in the textile industries. MONSANTO CHEMICAL COMPANY, St. Louis, Missouri and Everett Station, Boston, Mass.

MONSANTO CHEMICALS FOR THE TEXTILE INDUSTRY

Acetic Acid
Aluminum Sulfate
Aroclors *(chlorinated diphenyls)*
Calcium Sulfate
Caustic Soda
Chlorine
Dyestuff Intermediates
Disodium Phosphate
Glauber's Salt
Lacquers
Merclor *(bleach)*
Mixed Acid
Ammonium Phosphates
Nitrate of Iron
Oil of Vitriol
Phosphoric Acid
Santomerse *(wetting and surface active agent)*
Sodium Acid Pyrophosphate
Sodium Bisulfite
Sodium Sulfate, *anhydrous*
Sodium Sulfite
Solvents
Sopet *(wool spinning lubricant)*
Sulfuric Acid
Tetrapotassium Pyrophosphate
Tetrasodium Pyrophosphate
Tricalcium Phosphate
Trisodium Phosphate

MONSANTO CHEMICALS

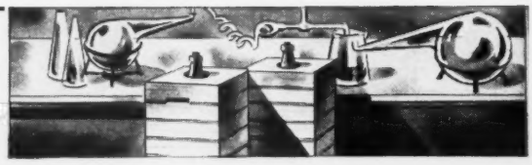
LET'S GO! U.S.A. · KEEP 'EM FLYING!

SERVING INDUSTRY . . . WHICH SERVES MANKIND

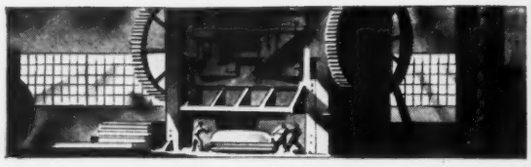
HE CALLED FOR HELP AND HE'S GETTING IT

FROM NOT 1 BUT 5

CHEMICALS



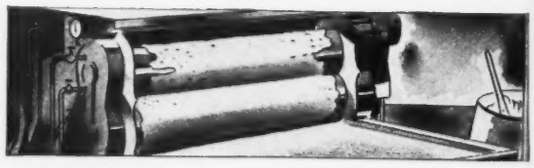
METALS



PETROLEUM

POWER

RUBBER



—How Taylor is helping not 1 but 5 essential industries help Uncle Sam

EVERY INDUSTRY in America has buckled down to the job of helping build up U. S. defense. Every American industry is an essential industry today. *Your* production is *essential* production. Uncle Sam needs your help. He can't be prepared without it.

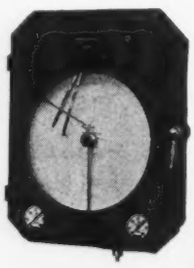
In thousands of plants and factories—in all *essential* industries—Taylor Instruments are right on the job. Just to illustrate how Taylor is helping, consider five—*not 1 but 5*—industries.

Chemicals, metals, petroleum, power, and rubber are vital needs of this nation. The chemical industry has stepped up its wonder-working. Familiar chemicals are being produced faster. Better chemicals in larger quantities are being turned out. New chemicals are appearing. The chemical industry has always depended on Taylor precision.

Without metals, there could be no defense. Metals are basic. Over the highly complicated, exact processes of metal-working, Taylor Instruments stand quality guard. Petroleum and its allied products must fuel America's fighting machines. More petroleum, better petroleum must be made available faster. In all refining operations, in all the great producing areas, Taylor Instruments are helping oil men.

Power—unlimited, uninterrupted power—must run America's humming factories. Taylor Instruments help produce that power economically. Uncle Sam needs rubber—needs it for a million jobs. Taylor Instruments have helped make the increased production of finer rubber an almost 100% automatic operation.

For a good many years, Taylor and all American Industry have been partners in precise production. Taylor has learned a whole lot from this work together. What we've learned is yours to use. If any experience, any special skills of Taylor Instrument Companies will help solve your particular production or processing problems — or help you get better service from your present instruments—please call us. There are no strings to this offer. Taylor Instrument Companies, Rochester, N.Y. Also Toronto, Canada.



The New Taylor Fulscope Controller Protecting America's Production with Not 1 but 5 Forms of Control

Taylor-MADE MEANS BETTER MADE IN AMERICA BY AMERICANS

Taylor

Indicating / Recording Controlling

TEMPERATURE, PRESSURE, FLOW *and* LEVEL INSTRUMENTS

TOPS in the BIG 3

1. UNIFORMITY
2. PENETRATION
3. SCOURABILITY

That's why processors throughout the textile industry are switching to SUNOTEX OILS.

One large processor, for example, found SUNOTEX OILS equal or superior to the finest olive oil obtainable . . . with the added advantages of absolute uniformity and a material saving in costs. He proved these modern textile oils . . .

- GIVE GREATER FIBER PENETRATION
- IMPROVE LUBRICATION
- ARE EASY TO HANDLE
- HAVE NO OBJECTIONABLE ODORS

Dyers handling goods processed with SUNOTEX OILS report outstanding ease of scouring — producing excellent results when dyeing delicate pastel shades.

Whether you're processing wool or rayon you'll find it well worthwhile taking advantage of Sun's Textile Technical Service. Now's the time to let one of Sun's "Doctors of Industry" show you how to improve quality . . . set a higher P-Q (Production Quota) . . . and reduce processing costs. Write SUN OIL COMPANY, Philadelphia

SUNOTEX OILS

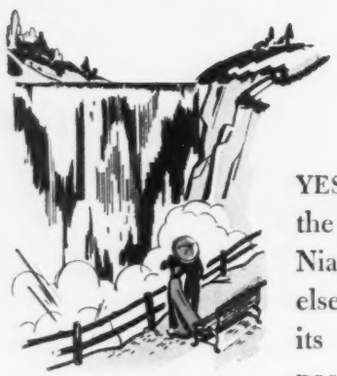
SUNOCO

SUN PETROLEUM PRODUCTS

HELPING INDUSTRY HELP AMERICA

and so...

The Bride Wore *Black*



YES, FOR MANY YEARS, the thrill of a train trip to Niagara Falls or anywhere else for that matter, had its dark side. Railroad passengers could either open the windows and risk a shower of dirt and cinders—or close the windows and endure a hot, stuffy trip.

And, unfortunately, most people assumed that nothing could be done about it. Sturtevant engineers, however, went to work on this problem—developed and built the pioneer railway air conditioning system. For the first time clean, cool air was available for railway passengers at the turn of a switch.

That was in 1910—years ahead of its time. With the growth of public interest in air conditioned theatres and restaurants, however, attention was turned again to the opportunities for air conditioned trains. Sturtevant had the answer.

Today, the vision of those men who foresaw the time when air conditioning would revolutionize railway travel has been realized. More than 8,500 cars on 40 railroads are equipped with Sturtevant Air Conditioning Systems or Apparatus.

And in countless other ways, Sturtevant "Puts Air to Work" for American and Cana-

Sturtevant

Puts Air to Work

for

the Railroads

Broadway Limited—

Pennsylvania Railroad's 16 hour, New York to Chicago flyer features such travel luxuries as Barber and Maid Service, Bedrooms, Duplex Rooms—and complete Air Conditioning with Sturtevant Equipment.

Rocket—

One of 15 streamliners of Chicago, Rock Island and Pacific Railroad serving the Middle West and incorporating every known improvement in rail travel—including Air Conditioning by Sturtevant.

dian Railways . . . ventilating Tunnels, heating draft-swept Round Houses, cooling Diesel Engines and Traction Motors, fanning the flames of Power House Boilers.

B. F. STURTEVANT COMPANY

Hyde Park, Boston, Mass. *Branches in 40 Cities*

B. F. Sturtevant Company of Canada, Ltd., Galt, Toronto, Montreal

Sturtevant

REG. U. S. PAT. OFF

Puts Air to Work

STURTEVANT — FOUNDER OF THE AIR HANDLING INDUSTRY

20th Century—

The most famous train in New York Central's crack New York to Chicago fleet, provides the utmost in safety, speed —and comfort provided by Sturtevant Air Conditioning Equipment.

Silver Meteor—

and the Orange Blossom, diesel-powered streamliners cut more than two hours from New York to Florida run of the Seaboard Railway—assure a cool, comfortable trip, with Air Conditioning by Sturtevant.

Crusader—

Reading Railway's new Philadelphia to New York Streamliner provides every up-to-the-minute comfort, at coach fares . . . including complete Air Conditioning with Sturtevant Equipment.

"With GULF QUALITY LUBRICANTS our frames are setting hard-to-beat production and maintenance records"

—— says this Overseer of Spinning.

The Overseer of Spinning checks the lubrication of the saddles on this modern high-speed frame. Equipment in every department of this mill is Gulf lubricated.

"Proper Lubrication also keeps Power Consumption Low"

"THANKS to Gulf quality lubricants, we are able to run our frames continuously at top speed, and to avoid shutdowns except for periodic inspection," says this Overseer of Spinning. "Result: Our frames are setting hard-to-beat production and maintenance records, and power consumption is kept at a low figure."

There are good reasons for operating records like this with Gulf quality oils and greases in service: These lubricants are scientifically manufactured to provide most efficient lubrication for every type of textile equipment. They retain their lubricating value for long periods of time even under severe operating conditions, provide positive protection at a low consumption rate, and contribute to maximum equipment performance and low power costs.

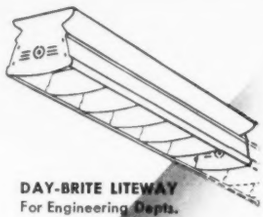
Perhaps improved operating efficiency and savings in maintenance and power costs can be obtained in *your* mill. Investigate—ask a Gulf engineer to recommend the proper application of lubricants exactly suited to each machine and each moving part. The Gulf line of more than 400 quality oils and greases is quickly available to you from 1200 warehouses located in 30 states from Maine to New Mexico. Write or 'phone your nearest Gulf office today.

GULF OIL CORPORATION · GULF REFINING COMPANY · PITTSBURGH, PA.

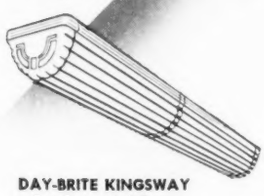
GULF INDUSTRIAL LUBRICATION

A 24-HOUR DAY FOR THE U.S.A.

DAY-BRITE
SUPER TWO-HUNDRED
For Factories, Mills



DAY-BRITE LITEWAY
For Engineering Depts.



DAY-BRITE KINGSWAY
For General Offices

ON the front line of Victory, light makes right — 24 hours a day! Seeing better means doing better! And, that's where Day-Brite Fixtures help — they utilize the higher efficiency of fluorescent lighting . . . Backed by 18 years' specialized lighting experience, they are designed and engineered to lessen eye fatigue and assure the clearer vision necessary for greater accuracy, closer tolerances, quantity output and fewer rejects . . . DAY-BRITE IS THE LIGHT LINE OF VICTORY! . . . Consult Day-Brite Engineering Representatives, located in principal cities . . . Nationally distributed through all Leading Electrical Supply Houses.

DAY-BRITE LIGHTING, INC., 5494 Bulwer Ave., St. Louis, Mo.

Whatever you need in Fluorescent Fixtures is available in the Complete Day-Brite Line! A large, modern plant geared to high-speed, accurate, quantity production every step of the way. Send for catalogs.

DayBrite Rivals Daylight

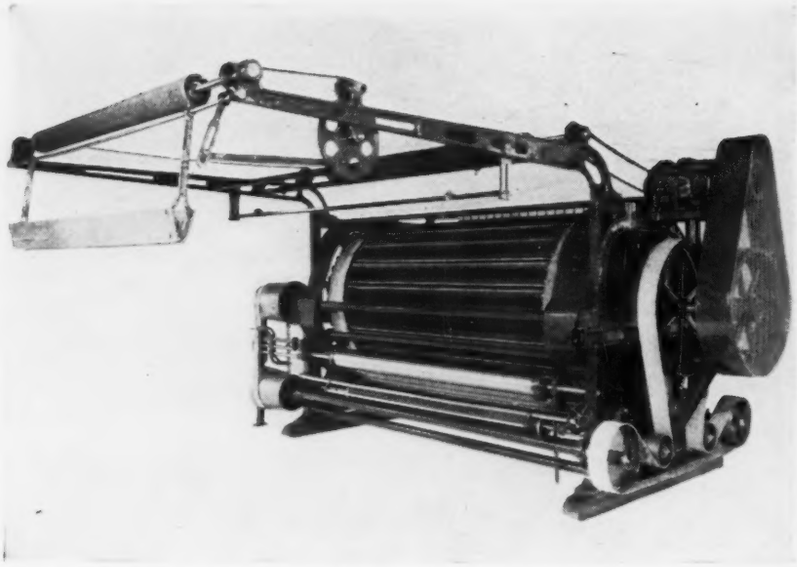
Adds Defense Hours!

THE COMPLETE LINE OF FLUORESCENT LIGHTING FIXTURES

Day Brite
FLUORESCENT
FIXTURES

33

Keeping Napping Machines On The Job



● BUILT BY WOONSOCKET NAPPING MACHINERY CO.

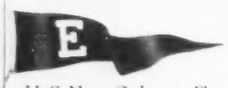
One year of bearing plus-performance after another has proved to Woonsocket engineers the wisdom of using 92 SKF Ball Bearings on napper rolls, cone shafts, strippers, and idler pulleys of this Model D 36-Roll Double Action Ball Bearing Napping Machine. Self-aligning characteristics permit SKF's to compensate for alignment deviations without binding or losing high load carrying capacity. Napping rolls are equipped with SKF's mounted internally. Where the job calls for Performance, the bearings are SKF . . . always. 4950

SKF INDUSTRIES, INC., FRONT ST. & ERIE AVE., PHILA.

U.S. Navy "E" Insignia (twice size) awarded employees of Textile Machine Works for outstanding production of Naval Ordnance materials for defense.

Sheer beauty against a night of stars . . . Every woman knows that the exquisite beauty of her stockings is in the quality of the fabric. Every hosiery manufacturer knows that the best profits are in first quality stockings knitted with first quality needles. . . . Keep your knitting machines young and effective with TMW Needles.

TEXTILE MACHINE WORKS • READING, PA.



U. S. Navy Ordnance Flag and "E" Pennant awarded Textile Machine Works for outstanding production of Naval Ordnance materials for defense.

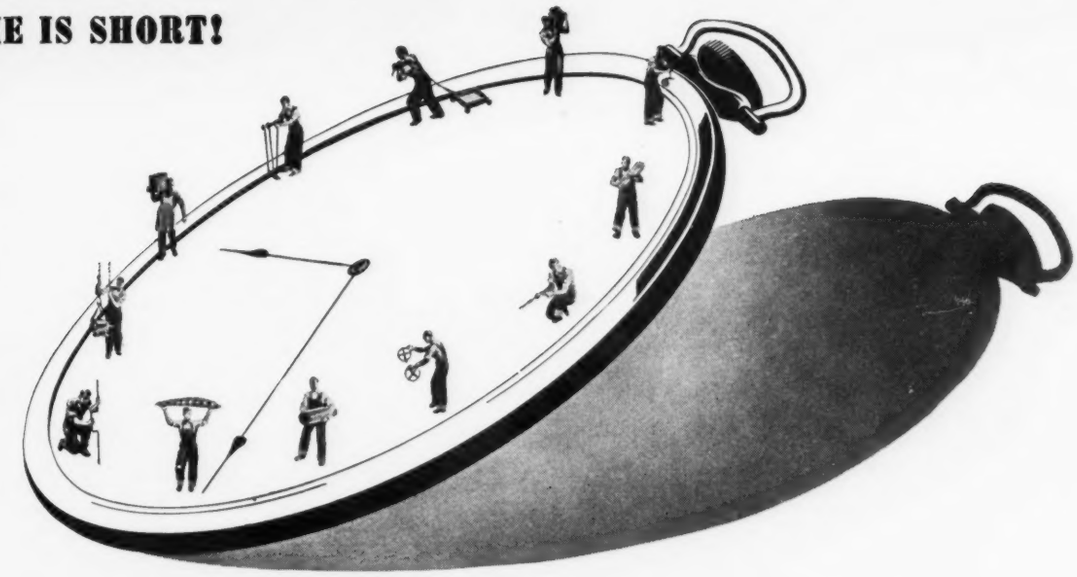
"To play one's cards well . . .

FOOTE

Regardless of the fibre used, the new READING 30-section 51-Gauge Full-Fashioned Knitting Machine produces 104 per cent more volume and 156 per cent more value than ordinary 20-section 42-gauge machines . . . . *And remember: Money invested in modern machinery serves as insurance for your total investment.*

TEXTILE MACHINE WORKS • READING, PA.

TIME IS SHORT!



8,760 HOURS TO GO IN '42

Men, make the most of them!

A MILLER Continuous Wireway Fluorescent Lighting System in your plant can pack more production minutes to the man hour...

January 1, 1942 . . . 8,760 hours to go. Golden, *going* hours. Hurry! Hurry.

Put all machines to work. Work machines all the time. Use the most efficient methods. Build an adequate working force. Keep the working force at work.

Squeeze every last drop of production from each priceless hour. Utilize the *proven* help of continuous-row fluorescent lighting, MILLER 50 FOOT CANDLER and 100 FOOT CANDLER. (MILLER TROFFERS for offices and drafting rooms.)

Point up the efficiency of your man-power with 50 foot candles or better of matchless working light . . . as many of America's arms and defense plants have done already.

Act promptly (after careful consideration) and we'll push hard to provide prompt deliveries—superlative service. Wire for helpful details. *(Representatives in principal cities.)*

Be sure you get these 5 MILLER benefits when you buy fluorescent lighting

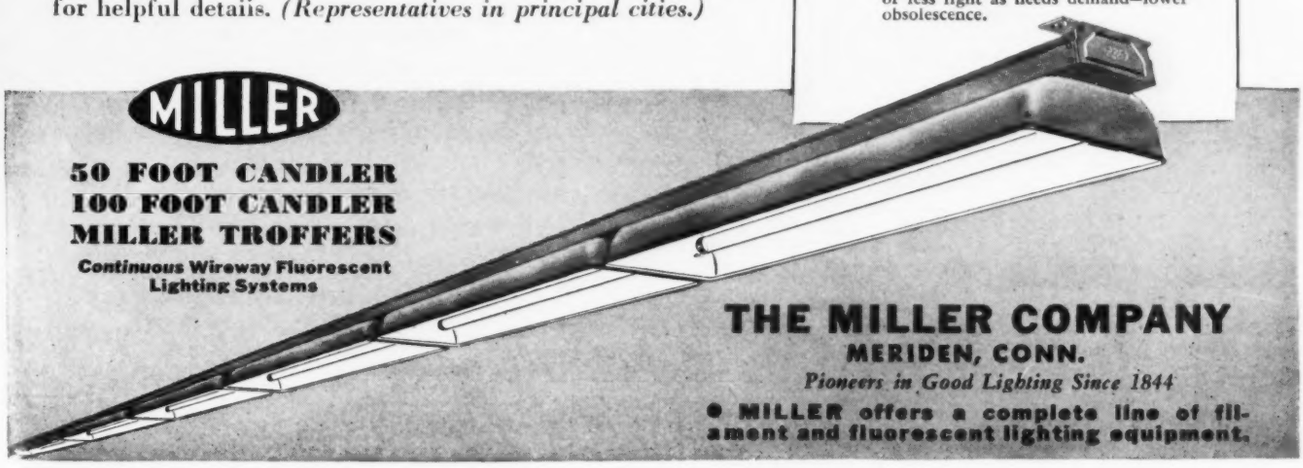
(1) **HIGHER ILLUMINATION—UNIFORM DISTRIBUTION** . . . 50 to 100 foot candles for faster, better production and greater worker efficiency. Production equipment can be moved without changing lighting.

(2) **30 TO 50% LOWER INSTALLATION COSTS** . . . Fixtures contain up to 80% of necessary conduit in continuous wire channels—make defense dollars go further.

(3) **FASTER INSTALLATION** . . . Steps up building schedules — goes in with minimum labor—plants get into production quicker.

(4) **SIMPLIFIED MAINTENANCE** . . . Easy to clean, removable porcelain-enamel reflectors—save valuable man-hours for production.

(5) **ALLOWANCE FOR FUTURE LIGHTING NEEDS** . . . Illumination increases up to 45% practical without new fixtures—completely flexible for greater or less light as needs demand—lower obsolescence.

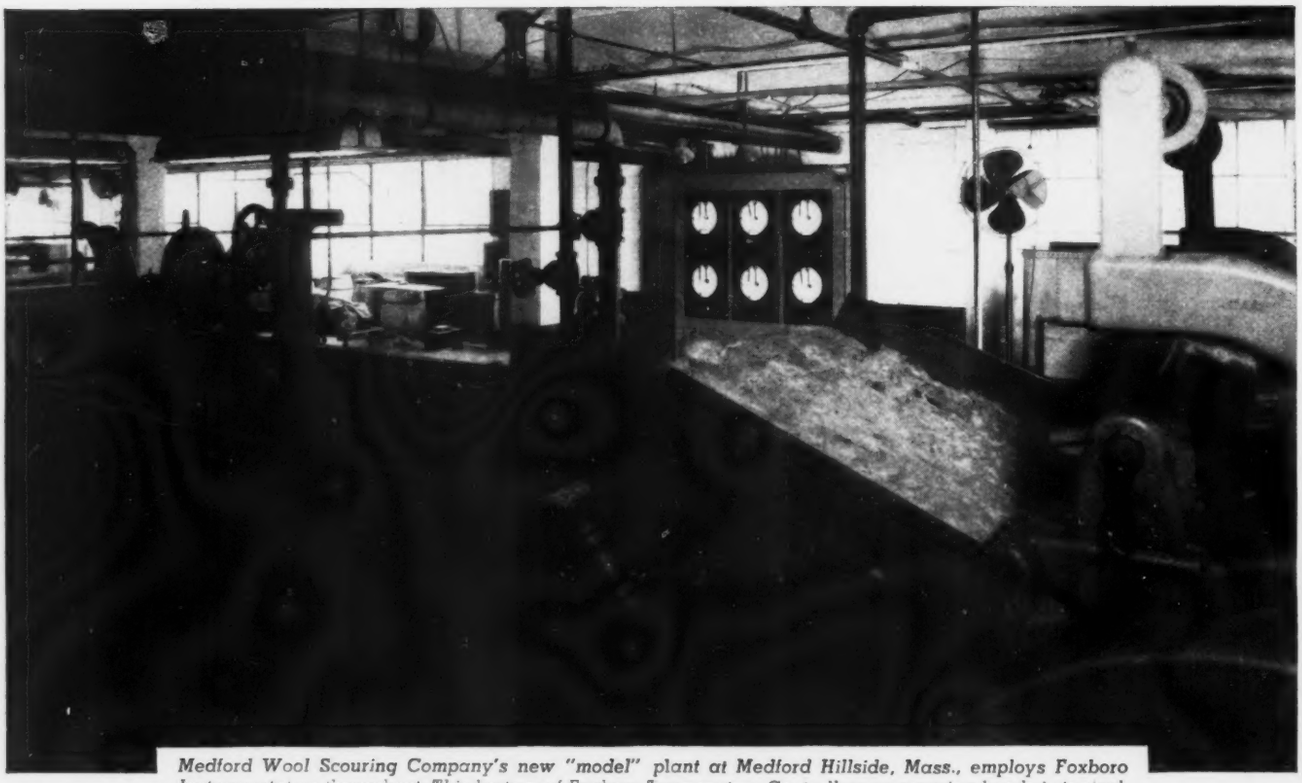


MILLER

50 FOOT CANDLER
100 FOOT CANDLER
MILLER TROFFERS
Continuous Wireway Fluorescent Lighting Systems

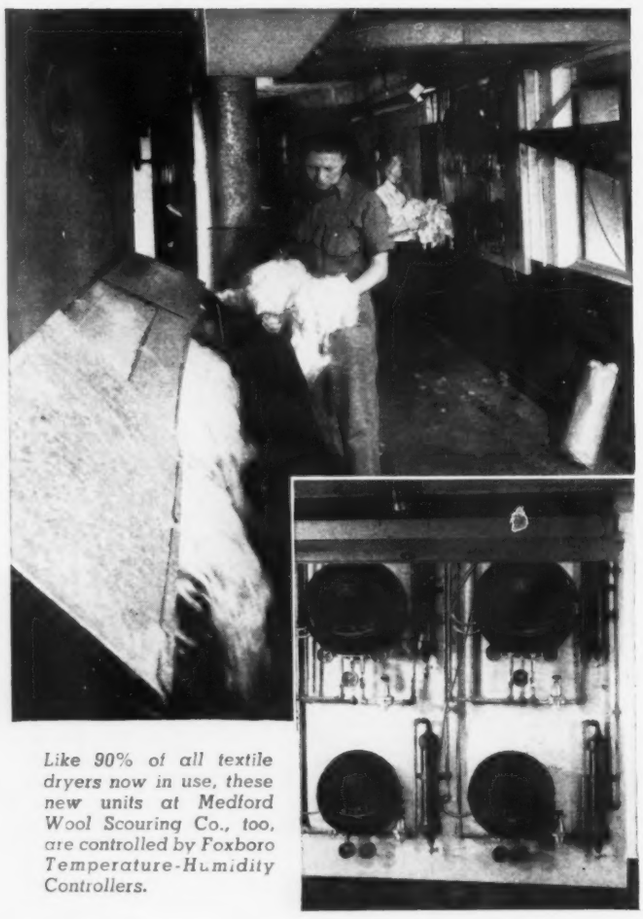
THE MILLER COMPANY
MERIDEN, CONN.
Pioneers in Good Lighting Since 1844

● MILLER offers a complete line of filament and fluorescent lighting equipment.



Medford Wool Scouring Company's new "model" plant at Medford Hillside, Mass., employs Foxboro Instrumentation throughout. This battery of Foxboro Temperature Controllers on scouring bowls is typical.

It Doesn't Come In Packages!



Like 90% of all textile dryers now in use, these new units at Medford Wool Scouring Co., too, are controlled by Foxboro Temperature-Humidity Controllers.

There's more to *correct instrumentation* of textile processes than just an instrument in a package! It takes "knowing how", as well . . . intimate knowledge of mill problems plus long experience in *applying* instruments to solve them.

Foxboro Instrumentation for textile mills is engineered by men who know cotton, rayon and woolen processing from the bottom up. More than 15 years ago, they recognized long-standing problems in textile drying, and solved them by originating the faster, safer practice of controlling *both* humidity and temperature in dryers.

Similarly, their first-hand experience showed the need for closer, more economical temperature control in batch-processing. As a result, these men developed Foxboro On-Off Controllers . . . the simplest, most positive of their type.

These are merely typical examples of Foxboro Creative Engineering. Write for details of the process instrumentation you require. **The Foxboro Co., 84 Neponset Avenue, Foxboro, Mass., U. S. A.** Branches in principal cities of U. S. and Canada.

FOXBORO

Reg. U. S. Pat. Off.

Creative Instrumentation

FIBER *for* FREEDOM

Freedom is the reward of responsibility—accepted and discharged.

This kind of responsibility is manifest in the uniform high quality of Standard Durene Yarns—safeguarded by exacting controls adhered to from raw cotton selection to the last finishing process.

COMBED PEELERS **STANDARD DURENE**
COMBED SAKS **THREADS**
SELO **PREMO**

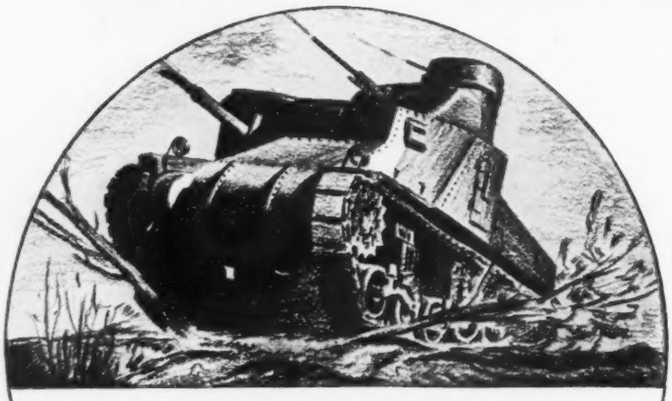
SPINNERS MERCERIZERS S-C-T DYERS BLEACHERS

STANDARD-COOSA-THATCHER COMPANY

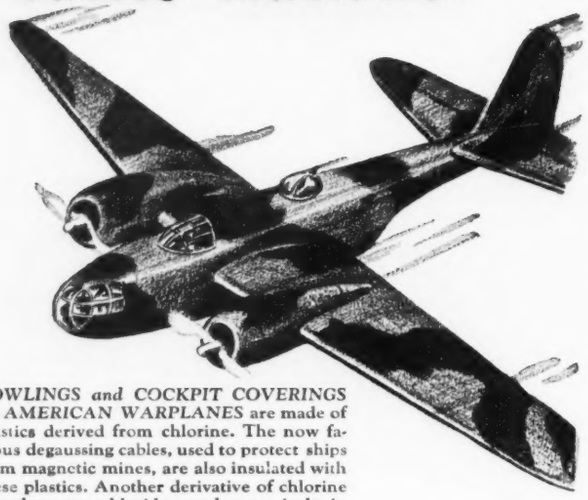
CHATTANOOGA, TENNESSEE • *Sales Offices: 804-6 LAFAYETTE BUILDING* • **PHILADELPHIA, PA.**

CHLORINE GOES TO WAR

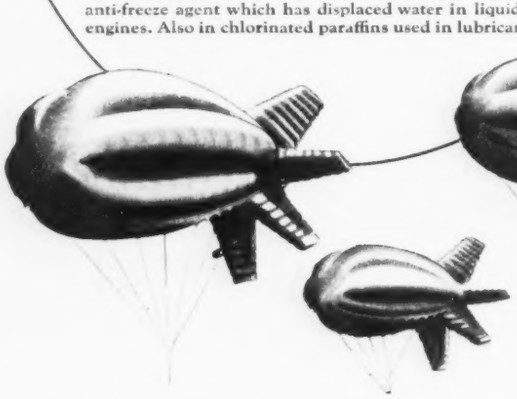
as America mans its battle stations!



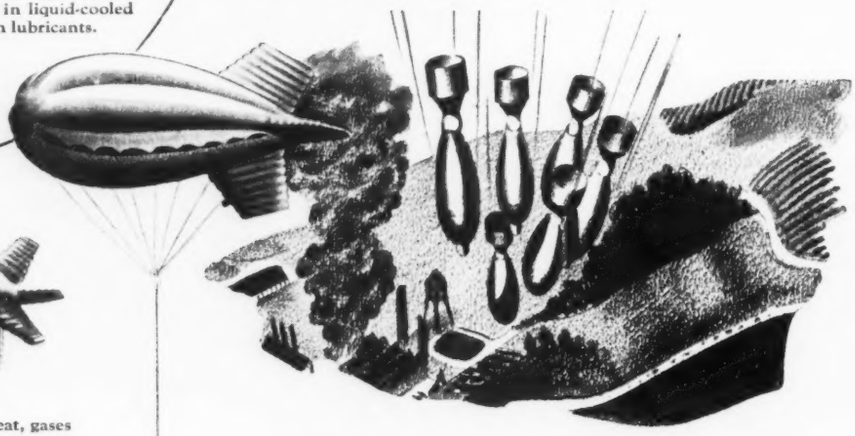
HI-OCTANE GASOLINE for U. S. TANKS and PLANES is produced from ordinary gasoline and tetraethyl lead. Rapid precision-fitting of tank and plane parts demands trichlorethylene, a degreasing solvent. Both tetraethyl lead and trichlorethylene require large quantities of chlorine. Chlorine is also used in the manufacture of diethylene glycol, the anti-freeze agent which has displaced water in liquid-cooled engines. Also in chlorinated paraffins used in lubricants.



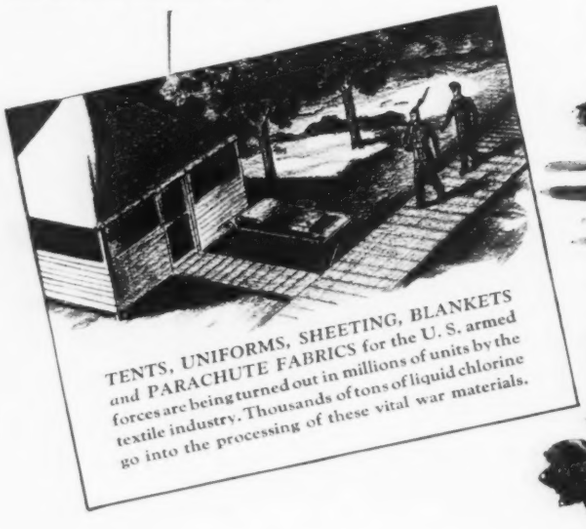
COWLINGS and COCKPIT COVERINGS for AMERICAN WARPLANES are made of plastics derived from chlorine. The now famous degaussing cables, used to protect ships from magnetic mines, are also insulated with these plastics. Another derivative of chlorine is carbon tetrachloride, used extensively in fire extinguishers for tanks, planes and trucks.



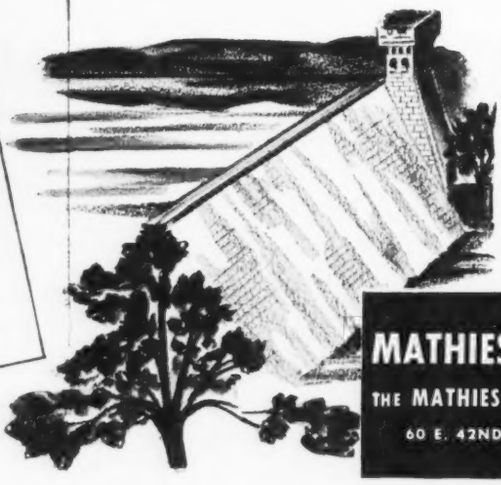
BARRAGE BALLOONS, capable of withstanding heat, gases and sunlight, are being manufactured from synthetic rubber. America's fast-growing production of synthetic rubber for protective balloons and other wartime needs has put an extra load upon the chlorine industry.



ALL-OUT PRODUCTION of MUNITIONS requires large amounts of chlorine, especially for processing of cotton linters for smokeless powder and other explosives.



TENTS, UNIFORMS, SHEETING, BLANKETS and PARACHUTE FABRICS for the U. S. armed forces are being turned out in millions of units by the textile industry. Thousands of tons of liquid chlorine go into the processing of these vital war materials.



BACTERIA POLLUTION by ENEMY AGENTS is being guarded against by chlorine. Public water works are now required to double the chlorine residual of water as an anti-sabotage measure. U. S. bases and army camps also require large quantities of chlorine for water purification and sewage treatment.

MATHIESON CHEMICALS

THE MATHIESON ALKALI WORKS, (INC.)

60 E. 42ND STREET, NEW YORK, N. Y.

LIQUID CHLORINE . . . SODA ASH . . . CAUSTIC SODA . . . BICARBONATE OF SODA . . . BLEACHING POWDER . . . HTH PRODUCTS . . . AMMONIA, ANHYDROUS and AQUA . . . FUSED ALKALI PRODUCTS . . . SYNTHETIC SALT CAKE . . . DRY ICE . . . CARBONIC GAS . . . SODIUM CHLORITE PRODUCTS

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CONTENTS

Management

WAR—and Textiles (Editorial) 49
Textiles All-Out to Beat Hitler; Industry for Biggest Production . 50
War's Start Found QM Prepared 51
Condensed Summary of QM Purchases 51
Priorities to Allocations 52
British Progress in "Concentration" of Textile Mills 62
A Textile War Council Needed (Editorial) 65
War Dominates 1942 Outlook in All Industries 66
From the Editor's Mail Bag 80

Merchandising

On the Price Ceiling Front 54
Hand-Weaving as a Fashion Source; Hobby Grows in Importance 70

Materials

Search for Substitutes for Scarce Dyes and Chemicals 58
Silk Hosiery Role Ended as Supplies Run Out 69
Corrosion-Resisting Materials; Survey to Aid Mills 72

Mill Engineering

Steam Economies in Spinning and Weaving Mills 78
Textile Equipment News 81
Parks-Cramer in New Home 90
Salvage of Machinery Discussed by STA 96

Methods

Why QM Rejects Cotton Fabrics 55
Black-Out Cloths—Learning from British Experience 56
Fabrics for Military Use 59
Blending Wools for Army Fabrics—Proper Methods 60
Mills Mill Modernizes for Faster War-Fabric Production . . . 63
Soaking Rayon for Use in Hosiery 68
Why Warp Ends Break in Weaving 75
Weave-Room Control—Essential Parts of System 76
Carding and Spinning Problems Discussed at Auburn 94
Loomfixers' Manual—Cotton 98
Loomfixers' Manual—Rayon and Silk 99
Fixing Hosiery Machines—Full-Fashioned 100
Fixing Hosiery Machines—Circular 101

WAR—and Textiles
Special Section
Begins on Page 49

DEPARTMENTS

Textile Equipment News..... 81
News of the Month..... 103
New Publications 84
The Overseers' Corner..... 93
Questions and Answers..... 97
New Machinery and Processes..... 81
Textile Calendar 107
Leading Editorial 49
New Dyes and Chemicals..... 84
News of Suppliers..... 85
Free for the Asking..... 102
News About Men..... 112
Textile Mill News..... 124
Overseers' Practical Helps..... 94

FOR CONTENTS BY INDUSTRY BRANCHES, SEE NEXT PAGE

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IN THIS ISSUE

TEXTILES IN THE WAR

WAR—and Textiles (Editorial) 49
Special Section begins 49
Textiles All-Out to Beat Hitler; Industry for Biggest Production 50
War's Start Found QM Prepared 51
Condensed Summary of QM Purchases 51
Priorities to Allocations 52
On the Price Ceiling Front 54
Why QM Rejects Fabrics 55
Black-Out Cloths; Learning from British Experience 56
Search for Substitutes for Scarce Dyes and Chemicals 58
Fabrics for Military Use 59
Blending Wools for Army Fabrics 60
British Progress in "Concentration" of Textile Mills 62
Mills Mill Modernizes for Faster War-Fabric Production 63
A Textile War Council Needed (Editorial) 65
War Dominates 1942 Outlook in All Industries 66
Corrosion-Resisting Materials; Survey Aids in Scarcity 72
Volunteering for Civilian Defense (Pete & Bill) 93

GENERAL

War—and Textiles: Section begins 49
Washington Developments 51
British "Concentration" of Mills 62
The Editor Says 65
War Dominates 1942 Outlook in All Industries 66
Hand-Weaving Industry as a Fashion Source 70
Steam Economies in Spinning and Weaving Mills 78
From the Editor's Mail-Bag 80
Black-Out Paint 81
Fluorescent Lighting Units 82
For Workers in Noisy Places 82
Instantaneously Reversible Motor 82
Driving Out Tight Shaft-Keys 94
Cleaning Oil from V-Belts 94

COTTON

Washington Developments Affecting Cottons 51
Why QM Rejects Cotton Fabrics 55
Black-Out Cloths Based on English Experience 56
Fabrics for Military Use 59
Mills Mill Modernizes for Faster Production 63
Why Warp Ends Break in Weaving 75
Weave-Room Control—Essential Parts of a System 76
Carding and Spinning Problems Discussed at Auburn 94
Salvage of Machinery and Other Problems Discussed by S. T. A. 96
Weaving Velour 97
Loomfixers' Manual—Cotton 98

WOOL

Washington Developments Affecting Wool 52
Fabrics for Military Use 59
Blending Wool for Army Fabrics—Proper Methods 60
Why Warp Ends Break in Weaving 75

RAYON & SILK

On the Price Ceiling Front 54
Hints on Proper Soaking of Rayon for Hosiery Manufacture 68
Silk's Role in Hosiery Ended as Yarn Supplies Run Out 69
Why Warp Ends Break in Weaving 75
Steam Economies in Spinning and Weaving Mill 78
Warper Creels 81
Weaving Velour 97
Loomfixers' Manual—Rayon and Silk 99

KNITTING

Soaking Rayon for Hosiery Manufacture 68
Silk's Role Ended in Hosiery as Supplies Run Out 69
Sewing Machine 83
Knitting Needles Are Rough 97
Fixing Hosiery Machines—Full-Fashioned 100
Fixing Hosiery Machines—Circular 101

PROCESSING

Search for Substitutes for Scarce Dyes and Chemicals 58
Corrosion-Resisting Materials; Survey Aids Mills in Scarcity 72
Two-Roll Padder 81
Piece-Dye Kettle 82
Brushing Machine 83
New Dyes and Chemicals 84
Removing Stains from Dye Kettles 97

IN THE NEXT

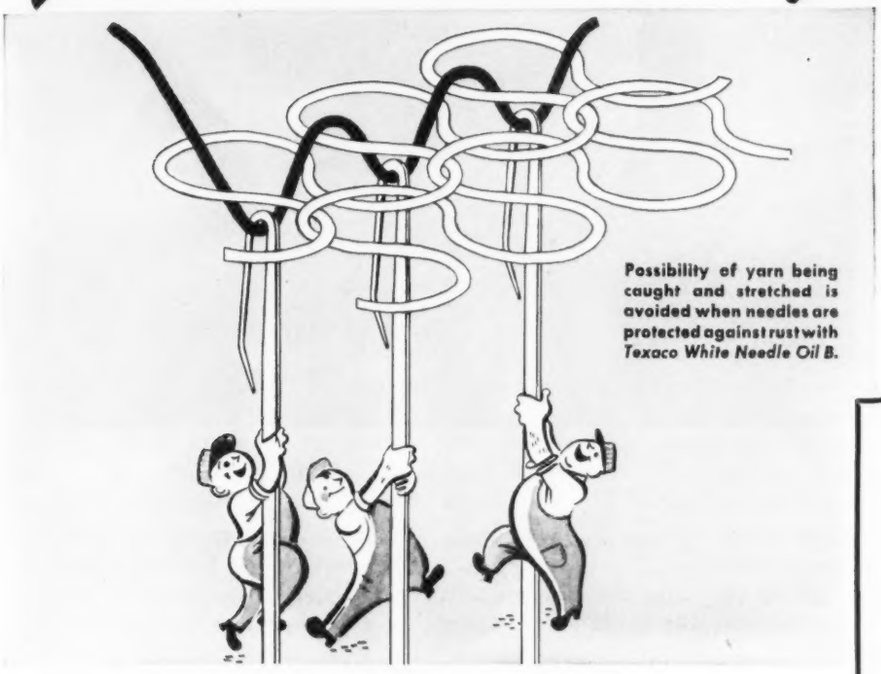
A TEXTILE WAR MANUAL will be the feature of the Annual Review and Forecast Number of TEXTILE WORLD, to be published next month. This will be designed as a book of reference on the major phases of the war program as they affect textiles.

It will cover such subjects as: Basic Specifications and Other Information on the Major Types of Textiles Purchased for War Purposes; Manufacturing to Government Specifications; Last Word on Priorities and Allocations; Price Ceilings Primer; Conservation and Substitution, Including Maintenance; How Mills Can Get Sub-Contracts; the Part of Labor in the War Program.

In addition, this issue will contain the Annual Review and Forecast Section, in which the technical and economic trends of the industry will be analyzed.

Finally, it will also include the regular February issue of TEXTILE WORLD.

Identical loops...



Possibility of yarn being caught and stretched is avoided when needles are protected against rust with *Texaco White Needle Oil B.*

COURSE AFTER COURSE

RUST-FREE NEEDLES forming uniform loops, less scouring, cleaner, sweeter-smelling grey goods . . . all are yours when you use *Texaco White Needle Oil B.*

Texaco White Needle Oil B prevents rusting of needles in the presence of moist air and wetted yarn. It resists oxidation, gum formation, rancidity. It assures smoother machine operation and prevents stock spoilage. Scouring of grey goods is easier, faster.

The outstanding performance that has made Texaco preferred in the fields listed in the panel has made it preferred by textile mills everywhere.

These Texaco users enjoy many benefits that can also be yours. A Texaco Lubrication Engineer will gladly cooperate . . . just phone the nearest of more than 2300 Texaco distribution points in the 48 States, or write:

The Texas Company, 135 East 42nd Street, New York, N. Y.

STOPS RUST . . . *Texaco Cepheus Oil C keeps oscillating and rotary knitting machine bearings free from reddish rust deposits . . . prevents stock spoilage . . . eliminates drag and sluggish motion.*

THEY PREFER TEXACO

★ More locomotives and cars in the U. S. are lubricated with Texaco than with any other brand.

★ More revenue airline miles in the U. S. are flown with Texaco than with any other brand.

★ More buses, more bus lines and more bus-miles are lubricated with Texaco than with any other brand.

★ More stationary Diesel horsepower in the U. S. is lubricated with Texaco than with any other brand.

★ More Diesel horsepower on streamlined trains in the U. S. is lubricated with Texaco than with all other brands combined.

FOR YOUR ENJOYMENT
TWO GREAT RADIO PROGRAMS

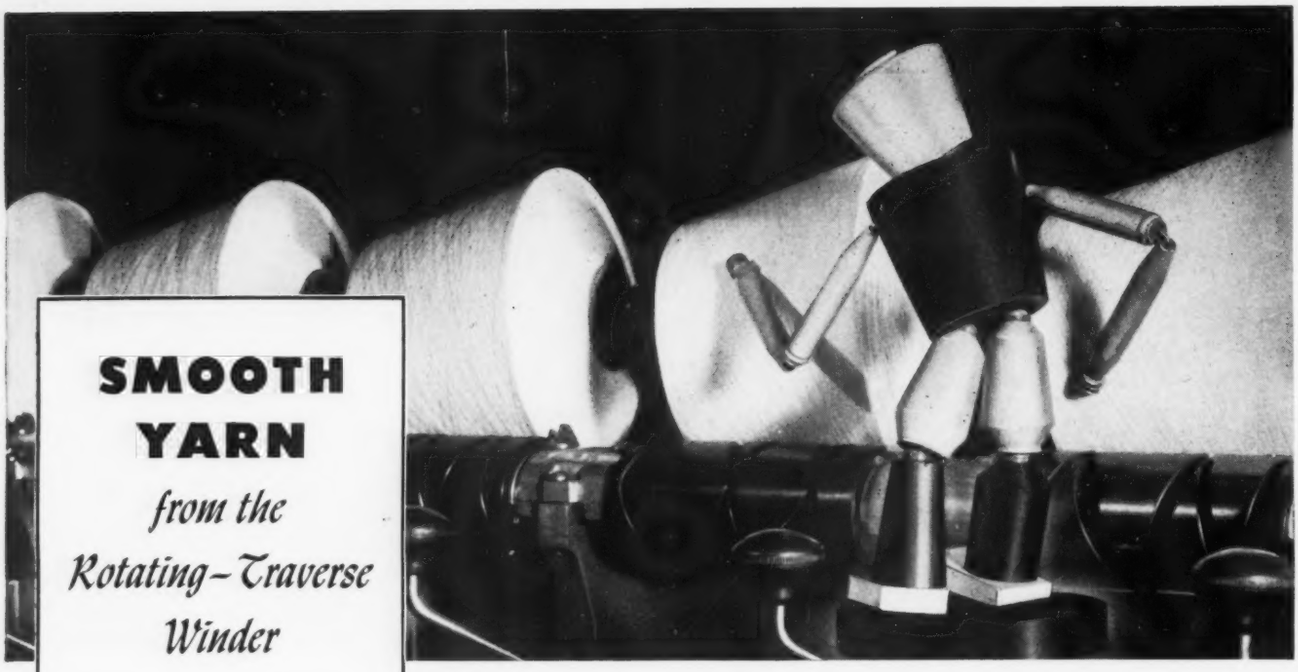
FRED ALLEN every Wednesday night. See your local newspaper for time and station.

METROPOLITAN OPERA. Complete broadcasts of great operas every Saturday. See your local newspaper for time and station.

TEXACO

TEXACO Lubricants
FOR THE TEXTILE INDUSTRY

RETURN METAL DRUMS PROMPTLY . . . thus helping to make present supply meet industry's needs and releasing metal for National Defense.



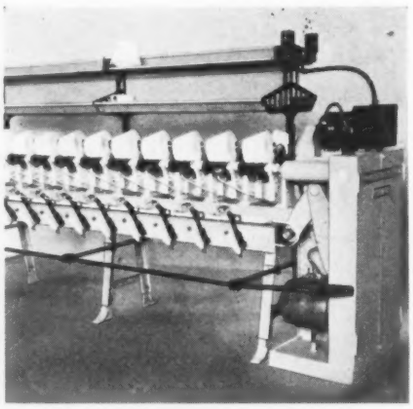
SMOOTH YARN *from the Rotating-Traverse Winder*

A spinner operating Roto-Coners* to produce open-wound cones of cotton knitting yarn, tells us: "In my opinion, the difference between a Roto-Cone* and any other cotton knitting cone, is the difference between the man who shaved this morning and the man who shaved yesterday!"

By holding two cones — one a Roto-Cone*, the other from a reciprocating-guide machine — to the light and sighting along the base, you can easily tell which cone has the smoother yarn.

The reason why the base of the Roto-Cone* is smooth can be found in the way the rotating traverse guides the yarn. Unlike other traversing methods, the rotating traverse revolves *in the same direction* the yarn is traveling. Thus, there is no chafing to rough up the fibers and cause a fuzzy appearance on the yarn.

Make this same test, and you will understand why knitters appreciate the better quality of Roto-Cones*, and why more and more spinners are modernizing their winding rooms with Roto-Coners*.



This modern, high speed machine may be equipped for paper coning or tubing, wood coning or for dye packages.

Universal—manufacturer of precision machinery — aids defense by manufacturing precision parts for military equipment.

See our catalog in TEXTILE YEARBOOK

*Reg. U. S. Pat. Off.

ROTO-CONER

LEESONA

Reg. U. S. Pat. Off.

OPEN-WIND CONES FOR KNITTING

DYEING PACKAGES — PARALLEL TUBES FOR TWISTING

UNIVERSAL WINDING COMPANY P. O. BOX 1605 **PROVIDENCE, R. I.**

BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA

What Can I Do?

EVER SINCE that Sunday morning when havoc swooped from the skies upon Honolulu, a new question has been churning about in millions of American minds. It is this: What can I do to help my country win this war?

This insistent question has pushed aside all matters of personal interest. From now on, individual wants and wishes must give way to the paramount needs of the nation. We all accept that. We have undertaken a huge job. Or, I should say, we have had a huge job thrust upon us. And unless we see that job through successfully it won't much matter what any of us may want.

That job is to win this war.

No longer are we trying to prepare for a war that we may get into. Today we are trying to win a war we're already in—and in up to our eyes. Nothing that any one of us now can do to help himself can get him very much if it does not also help our country to win this war.

I am sure that those who read these words will find many things to do. Some will enlist in the armed services. Some will become active in civilian defense. Some will labor to relieve distress in their home towns. Some will work with organizations set up to serve the men at the front. Each can and will find something he can do.

But this insistent question "What can I do?" goes beyond the individual and his personal service. It re-echoes through the offices and the shops of every American business concern. And what I have to say here is not directed toward individual effort. Rather is it intended for the men and women of American industry who make that industry a living part of American life. Today they are asking themselves: What can industry do? Or better still, what *must* industry do if our country is to finish the job it has started?

Those of us who work in and with American industry have one supreme obligation. We may feel very patriotic; we may be willing to serve "in any capacity;" we may be willing to sacrifice . . . if necessary. But if we fail to meet that one obligation, we shall fail our country in its time of need.

THAT SUPREME OBLIGATION IS AN HONEST DAY'S WORK, EVERY DAY, FROM EVERY MAN, EVERY WOMAN, EVERY MACHINE. . . .

IT IS AS SIMPLE AS THAT!

And that goes for all of us, whether we are engaged in civilian production or working directly on the weapons of war. American victory can be won only through the productivity of American industry.

Efficiency in production is not the responsibility of a few. It can be achieved only as we all put to useful purpose every minute of our time, every ounce of our energy, and every pound of our materials.

This responsibility of industry is the more vital because of what has happened to the business of making war. There was a time when success in war was chiefly a matter of well-trained, well-disciplined armies and competent leaders—when men were everything. In those days, military strength was a matter of strong battalions and able generals. Both still are vital. But today military might is essentially mechanical might. Modern war is an industry just as much as a factory or a railroad. In the first World War, mechanical equipment was relatively simple and limited. But today the special equipment of war and the expert skill needed to use it spell the difference between victory and defeat.

We Americans are not expert war-makers. That is why we must expect to suffer grievous losses before we can win substantial gains. We do not have military training and experience ready to hand when we need them. Neither do we have, ready for action, enough of the machines that are so essential to modern warfare.

So, when it becomes necessary to fight for our lives, we must start from scratch. And today, after a year's effort, we still are not ready to trade blow for blow with enemies who for years have schooled their leaders, trained and disciplined their people, and organized their industries to make war. We shall need more time to develop our strength. And while we are doing that, we must expect reverses.

But there is a brighter side to all this. For it follows that if we are granted this all-important time, the change in the method of warfare is right down our alley. The greater importance of mechanized equipment plays straight into the hand of the world's greatest industrial nation . . . if there is one thing America does know, it is industrial production! Our industries know how to produce. They have the skilled manpower. They have the organized facilities. Beyond any doubt, we can produce all that we need to win the victory that we *must* win—if only we are given the time.

THE FIRST RESPONSIBILITY OF THE ARMED FORCES IS TO GAIN THAT TIME FOR US.

THE FIRST RESPONSIBILITY OF INDUSTRY IS TO USE TO THE FULL EVERY SECOND OF THAT TIME IN PRODUCING THE WEAPONS

THE ARMED FORCES NEED TO WIN THE ULTIMATE VICTORY. INDUSTRIAL PRODUCTION IS THE KEY TO VICTORY. BUT IT MUST BE BIGGER PRODUCTION AND FASTER PRODUCTION THAN WE EVER HAVE KNOWN.

Heretofore American industry has worked to produce more of those things which make our lives more enjoyable. Today it must divert much of its energy from the products of peace to the weapons of war.

This change sets up a new yardstick of industrial performance. In time of peace we measure production efficiency in terms of money saved. From now on, we must measure efficiency chiefly in terms of time saved. For the plane, the tank, the gun, or the ship that is ready when it is needed to win a victory, is worth a million times more than the one that is delivered too late to avert a defeat.

Everyone knows how short we are of some materials and machines. But our most tragic shortage is the shortage of time. So whatever we may waste in the days ahead—and unhappily we are bound to waste plenty—let us never forget that the most deadly waste of all is the waste of time.

Time wasted never can be replaced. No one ever has discovered a substitute for time. If we would avoid the waste of this irreplaceable ingredient of victory, we must use every minute of it effectively—*while we still have it.*

That goes for us all. It goes for the man or the woman at the bench, at the desk, at the counter, in the field, or in the executive office. It goes for the politician as well as for the business man. It goes for the humblest and the most powerful. A nation at war cannot carry deadheads. It cannot spare a square foot for any one who will not pull his weight.

In this war, nothing short of complete victory can save the liberties of us all, rich and poor, employer and employee, haves and have-nots alike. The price of that victory is the labor, the loyalty, and the devotion of every last one of us. Winston Churchill said it well for the British people. You know how he said it. I need not repeat it.

All this imposes upon American industry, its owners, its managers, and its workers, the gravest responsibility they ever have assumed. If our country is to survive as a free nation, American industry must rise to that responsibility. If our country should fall, it would fall because American industry fell short of the need. It would be another case of "too little and too late".

This grave responsibility calls for the keenest management industry ever has known. It calls for unremitting research to make the most of our resources. It calls for the reduction of waste to a record minimum: that goes for waste of time, labor, and material. It calls for keeping our machinery working as near to full capacity as we can contrive. It calls for the highest rates of unit production we ever have known. That will mean skillful coordination by management and the most intelligent cooperation that the men in the shops can give. It calls for inventive ingenuity to match that of a nation which has produced some of the world's outstanding technical genius. For this is a war of technical proficiency.

But above all, it calls for a new devotion to the day's work. For so long as we are at war, the day's work will determine our country's security.

Whatever may be our material resources and our technical skill, however resourceful our management, however broad the scale of our effort, industry cannot measure up to its prodigious responsibility if any of us shirk the day's work. Right there is where we find the one thing we *all* can do—the one thing that is within the power of each of us.

THAT ONE THING IS SIMPLY TO DELIVER AN HONEST DAY'S WORK WHEREVER WE ARE CALLED TO SERVE. HONEST WORK WILL WIN THIS WAR. LOAFING WILL LOSE IT. THE SHOWDOWN WILL BE WHETHER HITLER CAN DRIVE HIS PEOPLE TO WORK HARDER THAN WE ARE WILLING TO WORK. THERE IS NO ONE TO DRIVE US. WE MUST DRIVE OURSELVES!

Is that so much to ask? It is all our country asks of us, the men of industry. It is all that the men who must work the guns and tanks in the field ask of us. It is all that the men who work our ships and our planes ask of us. "Give us the planes, the guns, the ships, the tanks, and all the rest of our tools," they tell us, "and we'll give you the victory that means so much to us all. But, in the name of that victory, give them to us quickly—QUICKLY—QUICKLY!"

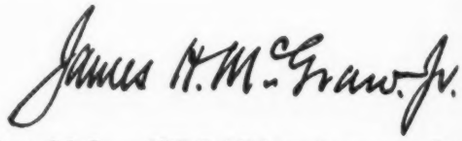
Is that, I repeat, too much to ask of us?

* * * *

To help American industry achieve ever-higher standards of efficiency has been the traditional mission of McGraw-Hill for three-quarters of a century. Normally that effort has been directed toward higher efficiency in the business of peace. But, as in the first World War, twenty-five years ago, it now is directed toward efficiency in the business of war and in every department of American effort that can contribute, directly or indirectly, to the achievement of victory.

And to that mission, I here pledge every resource of this company, its publications, its books, its staff, and every service it is qualified by experience and training to render to American industry, now enlisted in our common cause.

That is what we of McGraw-Hill can do. And that is what we *shall* do to our utmost.



President, McGraw-Hill Publishing Company, Inc.

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TEXTILE WORLD

DOUGLAS G. WOOLF, Editor

WAR—and Textiles

THE HOUR HAS STRUCK. There is no time, now, for "I told you so's" on the part of the erstwhile interventionists, or for apologies on the part of the erstwhile isolationists. There is only time for all-out victory—*not defense.*

The defense phase has passed. The victory phase has arrived. In the next years—two, or five, or ten, whatever it takes—every American must consecrate everything he has to the job of beating Hitler. *Hitler.* The target is Hitler, the vicious source of misery and starvation and death in most of the countries of Europe. The target is not the Pooh-Bah of the Rising Sun. We will take that little man, and the stupid little men who surround him, in our stride. The target is not the play-acting Caesar, Mussolini, who sticks his chin out, and stabs dying nations in the back. We will take him in our stride, too.

The real target is Hitler. Not because he is a big man. He is a little man, too. But the appeasers and the Fifth Columnists permitted him to grow in stature. His present menace must not be under-estimated. Astride the conquered nations of Europe, he represents a real enemy, one which may take years to subdue.

But subdue him we will. We will do it in the American way. We will laugh at him, as we destroy him. We will give the lie to his aura of invincibility. We will make all his puppets in Europe realize that there is a new man at the world throttle: Uncle Sam.

IN THE DOING OF THAT JOB, the textile manufacturer has a far greater responsibility than he may have yet realized. He has a public responsibility.

First and foremost, he has his part to do in the clothing and equipping of however many millions of men may be added to our armed forces. More in the limelight will be the manufacturers of airplanes and tanks and munitions and machine tools. But this writer knows, as does every other veteran of the last war, that the uniform, the overcoat, the underwear, the blankets, represent either a great plus, or a great minus, value in military morale. It is the textile industry's job to make sure that this is a plus value.

Second, the textile manufacturer has under his wing, so to speak, a group of American citizens for whose well-being he is directly responsible. Whether he has 25 workers or 5,000 workers in his plant, he occupies a position in their lives which no other person holds: a duty toward them which no other person can fulfill. It is his task to make sure that their working conditions, their remuneration, their chance for expression, their morale, are kept on a top level, for the duration. Not merely in order that the production-line of textiles for national victory may be unbroken, but also in order that the millions of men and women in textile jobs may be helped to reach their full stature as citizens of a nation now all-out to beat Hitler.

Third, the textile manufacturer has the job of producing goods for civilian use, within the limits of shortages of materials, machines, and labor. Before we are through with this war, we will realize that civilian morale is on a par with military morale, in the winning of the war. And next to food and shelter, clothing is the greatest morale builder.

Finally, the textile manufacturer is an individual—with his own home and his own family to protect.

THE SUPER-IMPOSITION of those three public responsibilities upon the private responsibility of the textile manufacturer makes his job a grueling one. There will be no 40-hour week for him. There will be probably an 18-hour day, seven days a week.

The execution of that job demands, first and last, calmness. The attitude of the chief executive will be reflected throughout the plant. If he gets panicky over every bit of discouraging news—and there will be plenty of it before we finally win out; if he fumes at the Navy Department and at the tax burden and at the Government, his excitement will seep into every last corner of the mill, even before he has wiped his brow and become calm again. The grape-vine route is a channel of communication more marvelous than even the radio—and infinitely more dangerous.

If he yields to the impulse to set up a Vigilante group in his community, he will help to nullify the activities of authorized agencies, and to scrap the Bill of Rights.

By his example, the tone of his community will be set.

This is a just cause, for which we are fighting. And it will be won only by just men.

Douglas G. Woolf

WAR-and Textiles

Textiles All-Out to Beat Hitler

OPM's call merely echoes the industry's spirit

By DOUGLAS G. WOOLF

WHEN OPM URGED, on Dec. 29, that the country's textile mills be placed on an all-out production basis, it was merely echoing the industry's own determination, which had reached flood-tide in the three weeks between Pearl Harbor and the date of OPM's communique. Nevertheless the call was a timely and helpful one, in that it further reinforces the industry's resolve.

Frank Walton's statement in which he stressed the urgent importance of speeding-up production of all mills making cotton yarns and fabrics, and in which he expressed the hope that plans can be made for mills to run over-time and on Sundays and begin third-shift operations wherever possible, has already received wide endorsement.

As the textile industry faces another war, these facts stand out:

1. Difficult as are many of the problems involved in clothing and equipping the unknown millions of soldiers and sailors and marines who will be called into the services before the job is completed, no one of these problems is insurmountable. The capacity of the textile industry, elastic via over-time and multi-shift operation, is more than equal to the task.

2. There will be temporary and recurring bottle-necks. These bottle-necks will appear particularly, as Mr. Walton pointed out, in combed yarns and fabrics, in cotton duck, osnaburgs, sheetings, and certain other fabrics.. But none of these will be basically serious or, again, insurmountable.

3. The possible shortages of basic raw-materials must be recognized. Silk, of course, is out of the picture for civilian use. Nylon, and other synthetics, will experience an increasing demand for war uses. Wool is always a war problem. Although Mr. Walton states that "no shortage of raw cotton is anticipated," there should be no period after that statement. There already *is* a definite shortage in certain staples and grades. More than that, the much-publicized surplus of cotton should not be counted on for the duration. We are facing what may be a long, long war. It is this writer's opinion that a bonus for extra production of cotton during the forthcoming growing season should replace the granting of gratuities for *not* growing cotton. An extra bonus should be placed upon the increased production of needed staples and grades. If the Department of Agriculture can be as successful in a positive program, as it has been in a negative one, there is nothing to fear about cotton supply, D. V.

4. The civilian aspect of the textile problem is something else again. There are, and will be, serious shortages there. But, fortunately, this problem too is not insurmountable. We can fight this war without silk stockings and rayon panties, but we can't fight it without uniforms, tents, powder-bags, parachutes, and what have you, in the military sense. Civilians will have to play second fiddle to those in the armed forces.

5. Civilian use, however, must not be frowned upon as unpatriotic. This country needs the morale which comes from smart dressing, as against the depression that comes from frayed shirt-cuffs and one-dress Beulah. It needs, also, a cushion of free economy to support, even if only in a token way, the military economy on which we are now embarked. So, every textile mill whose product is not needed for, or adapted to, war purposes, should be encouraged to continue to produce, and should be given repair parts and accessories, within the limits of the war program.

6. The national stampede for black-out fabrics must be kept within bounds. For every one of the millions of homes in this country to be supplied with such fabrics would require a production which defies this writer's mathematical abilities. The percentage of possible damage, "taking one consideration with another," is too small to make any such output a good actuarial risk. Purchase of black-out fabrics should be encouraged only in the real danger zones—principally the West Coast, and possibly in a few strategic spots in the East. But all families should be urged to adapt the treasures of their "linen chests" to such use. Children should be encouraged to aid in the hanging of them. That's good psychology.

7. Even the author of "The Blight Before Christmas" is glad that we have an agency in the Government—OPA—which is checking inflationary tendencies. But he hopes that St. Leon will follow a saner course than the one he has pursued to date.

8. We urge the formation of a Textile War Council. For further details, see page 65.

9. Buy Defense Bonds. But as you buy them, think of them as Victory Bonds, symbols of victory over the most vicious, and yet the most stupid, triumvirate the world has ever known.

WAR—and Textiles

(Index to contents of this special section)

Leading Editorial	49
Textiles All-Out to Beat Hitler	50
War's Start Found QM Prepared	51
Condensed Summary of QM Purchases	51
Priorities to Allocations	52
On the Price-Ceiling Front	54
Why QM Rejects Cotton Fabrics	55
Black-Out Cloths	56
Search for Substitutes in Dyes and Chemicals	58
Fabrics for Military Use	59
Blending Wools for Army Fabrics	60
British "Concentration" Progress in Textiles	62
For Faster War-Fabric Production	63
Buy Defense Bonds	64

War's Start Found Q. M. Prepared

Clothing of prospective army has been progressing

McGRAW-HILL WASHINGTON BUREAU

PAUL WOOTON, Chief Correspondent
Blaine Stubblefield
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By BLAINE STUBBLEFIELD

ONLY THE MANNER OF ITS COMING, not the final fact of war, surprised anyone. And the Quartermaster Corps was less surprised, or rather less unprepared, than any other Army service. For it now seems clear that QM, though it was compelled by isolationist opinion to dissemble, has been aiming in its procurement toward a multi-million-man Army for nearly two years.

Evidence of this first appeared in Administration plans revealed by the Chicago *Tribune*. This report to the President, authenticity of which was never denied, was drawn up by the high command of the Army and Navy. It recommended total man power in the armed forces of just over ten million men. This does not prove, though, that QM has been procuring for that number.

Present strength of the Army, though it is not officially stated any more, is about 1,800,000. Most recent war appropriations provide equipment in critical categories, for 2,000,000. The age 20–44 draft law will provide a pool from which 6,500,000 men can be drawn, including existing rolls.

Legislation just passed authorizes increase of the Navy from 311,861 men to 500,000. The Marines, numbering 64,053 counting reserves in service, are authorized to step their manpower up to 104,000. Navy says it will need 1,000,000 men by 1947.

It is reasonable to say only that the Army is aiming high. Not even the Commander in Chief knows just *how* high. The President has been advised that a great expeditionary land force probably will be necessary to beat the enemy. But military experts are often wrong, just like other experts.

Since Pearl Harbor, public resistance to privation has dropped like a

CONDENSED SUMMARY OF QUARTERMASTER PURCHASES—*Sept. 1, 1940, to Nov. 11, 1941*

This summary of Quartermaster purchases of clothing and personal textile equipment, and of cloth and fabrics, was compiled from Army and other defense official records by Congressman Philip A. Bennett, Republican, of Missouri. It was incorporated in a speech before the House, in which Mr. Bennett charged the Administration with extravagant purchases, or with covertly preparing a formidable expeditionary force. Bennett's speech, and other similar charges, caused Quartermaster General Edmund G. Gregory to write a reply, which he sent to the press and to the chairman of the House Committee on Appropriations. In this letter, General Gregory said that procurement of cloth and findings, which are slow to get, was for an army of 3,200,000 men, and all other items for an army of 2,000,000 men.

Cloth and Fabrics

Wool-serge cloth, 39,000,000 yards (20,500,000 yards under bid Oct. 18)	$101,512,478
Flannel shirting, 27,198,197 yards (12,600,000 yards under bid)	48,712,711
Wool overcoating, 6,800,000 yards	16,035,541
Wool lining cloth, 12,000,000 yards	18,268,842
Elastique cloth, wool, 2,000,000 yards	5,970,930
Elastique shirting, 500,000 yards	837,500
Melton, 2,500,000 yards	8,746,575
Doeskin, 489,000 yards	1,982,575
Mackinaw cloth, wool	$159,529
Kersey	89,700
Wool suiting, 862,146 yards	2,102,244
Wool cloth, 100,000 yards	264,625
Khaki cotton-twill uniform cloth, 45,158,892 yards	25,723,448
Herringbone-twill cotton cloth, 49,823,000 yards	16,331,864
Cotton uniform cloth, 61,060,000 yards	28,927,791
Wind-resistant cloth, 10,720,000 yards	5,557,447
Cotton lining cloth, 32,000,000 yards	8,001,499
Cotton-twill cloth (tent), 22,285,000 yards	5,540,532
Khaki cotton cloth, 48,000,000 yards	9,483,987
Cotton drill, bleached and unbleached, 32,300,000 yards	6,971,482
Cotton cloth, 40,900,000 yards	14,771,933
Canvas padding, cotton, 6,303,786 yards	1,064,841
Felt, under-collar lining, 12,000 yards	72,531
Insignia felt, 15,000 yards	91,398
Covert cloth, 280,000 yards	655,841
Cotton webbing, 8,350,000 yards	835,509
Cotton jean cloth, 3,000,000 yards	666,057
Cotton duck, tent and O. D., 64,000,000 yards	22,256,845
Silk parachute cloth	2,107,425
Airplane cloth	477,921
Ordnance cloth	497,346
Muslin	62,728
Target cloth	258,675
Miscellaneous cloth	104,594
Mosquito netting, 40,000,000 yards	8,000,000
Total	$363,144,944

Clothing and Personal Textile Items

Shoes, boots, and footwear, 16,000,000 pairs	$59,510,075
Underwear, shirts and drawers, 72,000,000 items	37,056,905
Wool service coats, 5,700,482	$22,801,930
Socks, wool and cotton, 77,807,626 pairs	15,340,470
Raincoats, all types, estimate, 4,000,000	14,099,986
Work clothing, approximately 10,000,000 items	11,451,585
Gloves and mittens, all types, approximately 12,000,000	12,672,237
Barracks bags, 7,000,000	3,535,262
Field bags, 800,000	749,296
Khaki cotton trousers, 14,000,000 pairs	9,511,320
Herringbone twill trousers, approximately 4,000,000 pairs	2,622,425
Wool-serge trousers, 5,265,178 pairs	3,947,884
Khaki cotton shirts, 15,978,508	7,989,254
Flannel shirts, 10,000,000, 30,000,000 more on order for an additional $48,712,711	5,163,788
Parkas, 225,000	2,266,497
Field jackets, 4,225,000	7,425,497
Canvas leggings, 6,300,000 pairs	4,860,240
Neckties, exceeding 13,300,000, as of Nov. 17, 1941	1,953,803
Handkerchiefs, approximately 20,000,000	1,143,459
Jackets, herringbone twill, 3,478,000	2,583,397
Cooks' and bakers' uniforms, approximately 1,000,000	3,800,000
Wool toques, 16,444	100,700
Blankets, bedclothing, etc.	80,330,991
Beds, cots, mattresses, etc.	22,654,390
Overcoats and mackinaws	16,384,283
Winter combat trousers	206,260
Caps, hats, and headgear	7,802,824
Bathrobes, pajamas, etc.	3,042,534
Flying suits, jackets, trousers	2,364,545
Sleeping bags	1,431,309
Waterproof bedding rolls	821,459
Towels	1,481,977
Winter combat jackets	110,773
Total	$367,217,350

Note—Purchase prices frequently include only the cost of cutting, making, and trimming the clothing items, because the Government supplies the cloth and linings.

WAR-and Textiles

plummet. The military can now take supplies away from civilians without hindrance. There is little doubt that plans are already under way to do so.

Because procurement officials have been compelled by isolationists and sluggish public opinion to mistate their intentions, it is impossible to tell just how many items of a given garment are deemed necessary in possession of a soldier, in storage for him, and on order for him. So we do not know how big an army we already have equipment for. We have the statement of the Quartermaster that procurement has been intended for 3,200,000 men in critical goods, and for 2,000,000 in other goods.

Taking that statement as a basis, we are now about one-third of the way on the job of equipping the seven-million-man army which seems to be our goal at this time. You can bet that our sights will not be lowered, but they may be raised.

Then if we are one-third along the way, look at the table of purchases which appears on previous page, and multiply them by three, and you will get your own estimate of the objective in terms of textiles.

But if the Quartermaster's statement of the Army strength we have procured for was warped by the Administration to meet opposition complaint and to protect what the Administration conceived to be the safety of the nation, then the estimate will be inaccurate.

Even if it was accurate in terms of quantities, you still would not know how much time the industry will have to do the job you arrived at. Whether the Government will put full pressure on the textile industry, as it did in the World War, depends on whether immediate land action is deemed necessary. A look backward at World War yields little in the way of a basing point to figure from. The current war is much different in the matter of munitions, but in textiles it is pretty much the same.

The World War, at its peak, was absorbing about 70% of the production capacity of the textile industry. We equipped an army of 4,000,000 men. We aimed to have in reserve four outfits of everything for each man. But those figures will not serve you as a starting point, for at least three reasons: (1) We were then planning on still more millions of men; (2) large volumes of our textile manufactures went to the Allies; and (3) many analysts have since shown that the Quartermaster's calculations were fantastically wrong on the plus side.

It is extremely difficult to figure out what's ahead on the basis of World War I and recent procurement records. And the Quartermaster Corps, although its business is less a military secret than that of any other Army branch, is shutting down on information, to be on the safe side. Thus the civilian supplier takes on more of the soldier's function: not to reason why but to do as he is told.

Priorities to Allocations

ALTHOUGH THERE IS NO sharply defined change in priorities as they apply to the textile industry, nevertheless a sort of inexorable change is moving the whole preference system toward an ultimate allocation system, mentioned in previous issues of this publication. The allocation system will tell each manufacturer how much material he can have, and when; instead of telling him to scramble for it with a preference card in his hand.

The first reality and harbinger of allocations came to the textile industry in the form of an OPM order, Dec. 22, taking control of the entire stock of burlap. The industry had had a taste of allocations some time back, when the Government told the rayon and silk men just what to do with their goods. But those were special cases. This burlap order is in front of a trend, as Mr. Willkie put it. Agriculture and chemicals have been using three-fourths of the total, all from India. The other fourth was taken by furniture, upholstery, rug and carpet, textile, meat-packing and rubber industries. Now, two-thirds go into a stockpile for Army and Navy, and one-third goes to agriculture and chemicals.

Similar to the burlap action was OPM's restriction on sale of Manila cordage, which comes from the Philippines, by amendment of Materials Order No. 36. Sale of Manila cordage to the mining industry is eliminated, and other curtailments are imposed.

Then there is the revision on Dec. 23, of Priorities Regulation No. 1, the basic document which governs the operation of the priority system. This revision, boiled down to a few words, says that thereafter, all orders bearing a priority rating, even B-ratings for essential civilian orders, as well as A ratings for defense orders, must be accepted by manufacturers in preference to any unrated order. What this means is that the B rating, hitherto regarded as a cross-eyed step-child, is now taken into the priority family, so that the A-10 rating, formerly the lowest in actual use, will carry some weight. As you may know, all defense orders not otherwise rated now carry the A-10 automatically.

What this means to the textile industry is that the A-10 rating under OPM priority order P-53, which applies to maintenance and repair of textile mill machinery, and to textile machinery manufacturers, will have more pulling power than it has had. Read TEXTILE WORLD's "Priorities: What to Do About Them," on page 62, December issue. At this writing, those directions still stood, but were subject to partial obsolescence at any time.

WOOL CONSERVATION, expected daily since hostilities began, was announced by R. R. Guthrie, chief of OPM's Textiles, Clothing and Equipage Branch, as this article went to press. A formal order, adding wool to the lengthening list of strategic war materials under allocations, was being prepared.

The order restricts the use of new wool, in the manufacture of woolen and worsted materials, for the first quarter of 1942, to 80% of the rate prevailing during the first six months of 1941. The 80% includes production for both civil and military orders.

"Military requirements," says the order, "which will be much larger than they were during the first half of last year, would be met in full, whether or not they amount to more than 80%. What remains, up to the 80% allocation for both uses, would be available for non-military or civilian orders. Production over 80% would be permitted under the order on condition that the entire output of any given mill is for military orders and none of it—not even a fraction of 1%—for civilian uses."

What this means, in plain blunt language, is that the Government is cutting wool consumption to 80%, and

Textiles and-**WAR**

out of that all military needs will be supplied, and the civilians can have the rest. Mill use on civilian account is cut to 50% on worsteds, to 40% on woolens, to 50% on carpets.

But that is only the beginning. Mr. Guthrie adds, "There are so many uncertainties regarding wool deliveries, that it would be unfair to lead any of you"—speaking to the woolen and worsted manufacturers industry committee—"to believe that this liberal allocation can continue throughout the year. In fact, there is a very strong possibility that it won't continue."

In this connection, the New York *Journal of Commerce* said it had learned that wool for civilian worsteds, woolens, and floor coverings, after the first quarter of this year, probably will be cut to 30% of the rate of a comparable period in 1941. A program to alleviate labor dislocation is being formulated by OPM.

Government wool experts told TEXTILE WORLD that on Dec. 1 we had in stock about six to eight months supply for all purposes. Normal consumption of wool for civil goods is about 500,000,000 lb., but in 1941, total consumption was just over a billion pounds, and over half of it went into military goods.

Only 180,000,000 lb. of the proposed 250,000,000-lb. British reserve of Australian wool being stored in the United States, was delivered. About 22,000,000 lb. of it came from South Africa. This wool has now been purchased by the United States.

Curtailment of wool use is, of course, a safety expedient, like that placed on rubber and tin. The Administration wants to see how effectively the Axis submarines can slow our bottoms carrying wool from Africa, Australia, and South America.

Poster to promote pay-roll savings plan

TWO OTHER OPM orders issued recently have a noticeable bearing on textiles. One is the new "PRP" or Production Requirements Plan, and the other is P-100.

The PRP order is a plan replacing the old Defense Supplies Rating Plan, which has been little used by the textile industry. The latter authorized a manufacturer to report what supplies he had used during the last quarter, and, if he was 100% in defense production, he would ask for the same amount for the next quarter. All this was covered by an A-10 rating.

Under the new PRP, the manufacturer makes application on form PD-25a, and asks for various supplies for three months to come, based on a covering statement as to: (1) volume of products he has been making; (2) their use in relation to defense or essential civilian needs; (3) amounts of scarce materials he has on hand; (4) additional amounts he will require. OPM's decision will depend upon those facts, plus over-all policies of SPAB at the time, and upon the recommendations of the appropriate industrial branches of OPM. Various ratings may be put upon the different supplies the manufacturer asks for. After he gets approval, the manufacturer simply makes a note on each order, stating that it comes under PD-25a, and that this particular order has such and such a rating. The ratings may be anywhere between A-10 and A-1-a. This plan is for supplies for end products only, such as, in textiles, yarn, starch, dyes, etc.

The other new order is Preference Rating Order P-100, which takes the place of the old Repair and Maintenance Order, P-22, which covered industry in general, and which is now

WAR-and Textiles

revoked. P-22 could be used by the textile and textile-machinery industries, but it was not necessary, because P-57 was set up specifically for those industries. Priority officials in the textile branch of OPM seemed unconcerned about P-100, said they had not read it.

The silk seizure story, which seemed buried for the duration, popped up again as OPM suspended from all priority rights, among other firms, a group of three hosiery manufacturers for violating the priority regulations. This group was the Mock, Judson, Voehringer Co. of North Carolina, Inc., Greensboro, N. C., and its subsidiaries, the Siler City (N. C.) Hosiery Co., and Alabama Hosiery Mills, Decatur, Ala. These companies allegedly diverted 56,000 lb. of silk from defense into hosiery by stating falsely, according to an OPM report Dec. 23, that the bales had been opened prior to Aug. 2, 1941.

On the Price-Ceiling Front

ALREADY MORE THAN HALF under the price ceiling, nearly all of the other half of the textile industry was under or on its way within ten days after the Jap stab at Hawaii. To cotton yarns, cotton gray goods, raw silk, rayon gray goods, carded and colored-yarn cotton goods, and upholstery furniture fabrics, which have ceiling schedules, the Office of Price Administration added raw wool, wool tops and wool yarns, with a schedule effective Dec. 18. OPA also announced that "temporary" ceiling schedules were being prepared (at this writing) on a "wide variety of textiles not now subject to price control," including one on wool cloth. OPA said a price ceiling would soon be placed on all forms of rayon waste, below current levels.

On Dec. 23, OPA announced amendment of cotton gray-goods schedule No. 11, revising ceiling prices of cotton fine goods tied to the "sliding scale" market price of raw spot cotton. These fine goods are mostly woven of combed cotton yarn made from long-staple cotton, and they sell at a premium above ordinary cotton products. In addition to the constructions of combed broadcloth, combed lawns, dimities and voile already covered, the new schedule covers eight marquisettes, five filling sateens, and single constructions of pique and pongee. As now enlarged the OPA ceiling extends over about 50% of the fine goods market.

Close upon the flexible ceiling for fine goods, OPA issued a revised ceiling on combed cotton yarns, which similarly provides up and down adjustments in line with fluctuations in spot cotton prices. This schedule is subject to further detail change. The sliding scale for combed cotton yarn completes OPA's objective of tieing all cotton goods ceilings to raw cotton prices. The general level of maximum prices, as revised, reflects the higher cost of long-staple cotton.

The wool and wool yarn schedule forbids sales at prices higher than those which prevailed between Oct. 1 and Dec. 1, 1941, but OPA Administrator Leon Henderson explained that this was an emergency action, and that a revision would be made when current studies are completed.

The "temporary" schedules being readied are "to call a quick halt to steady price advances since the war, and to stabilize prices while definite price schedules are being developed," said Henderson. These schedules will mark the first entry by OPA into finished textiles such as blankets, towels, table cloths, sheets, and pillow cases. Among goods to be covered in addition to wool cloth, will be such of the following as are not already under the ceiling: cotton finished goods, rayon gray goods, rayon finished goods, and all mixtures and combinations of textile fibers.

The schedule on wool cloth will forbid selling at prices higher than those reached between Oct. 1 and Dec. 6, 1941, while ceilings for all the others will be prices reached between Nov. 1 and Dec. 6, 1941.

Control on wool and wool goods prices is more than a mere extension of OPA's power to "prevent inflation." About 60% of the wool supply, necessary to public and military welfare, is being imported this year. The Axis will not capture Australia, South America, and South Africa, where the wool comes from, but might sink enough of our ships, and so delay others on round-about routes, that our military would suffer for lack of wool.

Meanwhile, there is renewed talk in Washington that OPM is about to take over a heavy percentage of raw wool stocks on hand. These stories have been abroad before, but they are far more acceptable now following the wool conservation program and the suggestion of allocation. Great difficulties would accompany any extensive militarization of wool stocks, because thousands of workers in plants and portions of plants not producing for war services would be thrown out of jobs. The effect would be even more serious than the silk order was.

In a number of recent actions on prices OPA put a ceiling on kapok, 90% of which comes from the East Indies; substituted a formal price-schedule for the individual agreements in the wool floor-covering industry; put a ceiling on used burlap prices, hoisted by sudden need for sandbags; put a top below current levels on rags, badly needed in the manufacture of roofing; amended the carded cotton-yarn and carded gray and colored-yarn cotton goods schedules to allow completion of deliveries under contracts made before July 21, at maximum prices corresponding to a spot cotton price of 15.99¢; Henderson requested leading rayon-yarn jobbers and converters to file complete lists with his office, following reported resales at premium above the allowed markup; prices of bleaching powder, used by the textile industry and now vitally needed by the armed forces for protection against poison gas and as a cleansing agent, have been stabilized through individual agreements.

OPA is still studying prices of textile preparatory and finishing machinery. A group of manufacturers in both classes met with OPA in Washington on Dec. 8 and 9, submitted data and talked things over. OPA officials told TEXTILE WORLD, at this writing, that the study is still going on, and they did not imply that immediate action was intended.

Sudden pressure of war lent additional power to all the defense agencies, including OPA. "Requests" and orders from OPA, which previously met varying degrees of opposition, now find full compliance.

So willing is this compliance that Congressional demand for drastic price control legislation has definitely slacked off. Henderson still wants a strong law. He may not get either the business-licensing provision or the 100% of parity farm-product ceiling. But he will get more hooks for his price balloon anchor than it has now.

Why QM Rejects Cotton Fabrics

Weaving imperfections most prevalent; other defects

REJECTION OF FABRICS by Army Quartermaster inspectors has reached proportions which, while not yet alarming, are cause for considerable concern among both procurement officers charged with obtaining textiles for Army use and mill men whose aim is to supply those textiles. This was pointed out last month in the first article of a short series outlining the major "reasons why" QM finds it necessary to turn down cloths, together with some data on the mill causes to which these defects are ascribed. Woolen and worsted uniform fabrics were discussed last month; the current article will cover cotton cloths intended for similar service.

Weaving defects are at the head of the list of causes of cotton fabric rejections. Of these, it is reported, mispicks and broken picks are most notorious. An example of the latter is shown in Fig. 1. Among causes of broken picks are cut shuttle-eyes, sharp center-fork prongs, sharp feeler tips, rough boxes, top shuttle riding over filling of bottom shuttle, rough shuttles, shuttles not entering boxes straight, poor filling winding, bobbin loose in shuttle, bobbin not centered in shuttle, rough pickers.

Mispicks can result from starting a loom on the incorrect pick after a pick-out, loom turned backward before starting, improper operation of filling stop motion, etc. Operation of non-automatic looms without filling stop motions is another cause.

Also troublesome are ends out, broken ends, wrong draws, tight ends, smashes, floats, and filling drawbacks. Broken ends, shown in Fig. 2, and ends out can be due to rough shuttles, cut heddles or reed, tight reed, improperly-lined-up whiproll, shedding too high, wrong timing of harness, over- or under-slashed warp, and warp riding lay. Operation without warp stop motions also contributes.

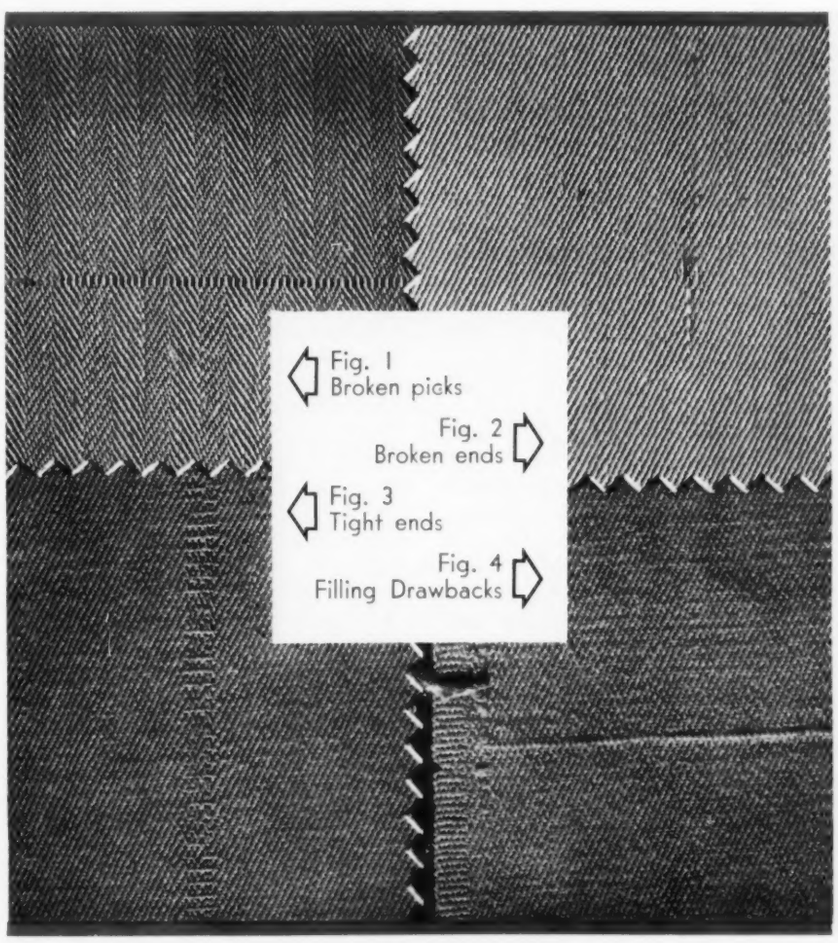
Wrong draws can be traced to one of two sources: either a drawing-in hand fails to follow the drawing-in draft, or a weaver draws a warp end in the wrong heddle eye or reed dent.

Tight ends, illustrated in Fig. 3, can result from accumulated lint or crossed or tangled ends behind drop wires, improper winding of yarn on loom or section beams, and ends wound or twisted around heddles or drop wires or through heddles in wrong direction.

Smashes can be caused by breaking of harness straps or harness ribs, accumulations of lint or tangled ends between harness and reed, rough shuttle, shuttle breaking, improper filling change which leaves tip or butt of quill projecting from shuttle, or protector motion failing to work when shuttle stops in shed.

Floats can be caused by ends which break out, becoming tangled with other ends between harnesses and reed, thereby preventing them from shedding correctly, or by unclean harnesses. If possible, broken ends should be made to snap out of reed and harness, to prevent tangling.

Filling drawbacks, also known as jerked-in filling, are shown in Fig. 4 (this sample also contains a filling slub). Drawbacks are caused by a shuttle catching filling as it enters the shed, so that the yarn loops and doubles near the selvage. They are a result of weaving on a loom that is too wide for the fabric. This defect is also likely to be encountered in cloth woven on looms not equipped with automatic trimmers.



WAR-and Textiles

Black-Out Cloths

American textile mills can learn from British experience

WHEN ENGLAND WENT TO WAR there was a frenzied demand for black-out materials. Windows were blacked out by means of paint, black paper, shutters, and closely-woven fabrics of various types. Enormous quantities of black and dark-green cotton cloth were sold. Paint, paper, and shutters proved to be awkward to use, expensive, or otherwise undesirable. Many of the fabrics used at first proved unsatisfactory for one reason or another.

When Hawaii was bombed, there was a frantic rush on the eastern and western seaboards of the United States for black-out materials. But within a week OPM issued a memorandum discouraging use of any new materials for black-out purposes in homes and pointing out that there is no official black-out cloth. This memorandum undoubtedly will put a halt to the needless purchases of black-out materials, and will allow preparations for blacking-out of vulnerable areas to proceed in an orderly manner. It will permit us to avoid the mistakes made in England and will give American textile manufacturers an opportunity to develop various types of fabrics which are most suitable for black-out purposes.

British experience in manufacture of black-out fabrics should be of great assistance to American textile mills which plan to go into production of such materials. A large part of this article is devoted, therefore, to descriptions of several types of black-out fabrics which have proved satisfactory in England. Information on those fabrics was compiled from Britisih textile publications and supplemented by data from other sources.

It did not take long to discover that what is required in a black-out fabric is an opacity which is practically complete in conditions of artificial lighting in a room illuminated for fine work or reading up to, say, 45 foot-candles. Accordingly, a standard specification and a standard test for black-out fabrics were established by the British Standards Institution. To meet this specification, fabrics must not transmit more than 0.003% of the light falling on the fabric. Fabrics passing the test may bear a label: "Obscuration complying with British Standards Specification B.S./A.R.P. 23."

Official Civilian Defense Photo—from OEM

Putting up the black-out curtain

The method of testing is as follows:

"The obscuration value of the material shall be determined by measuring the amount of light transmitted by a simple layer of the material immediately in front of a bright sensibly colorless diffusing screen. The method must be such that effectively all the light passing through the material—irrespective of direction—is included in the measurement. For practical purposes, one way to achieve this is to place close in front of the material a second sensibly colorless diffusing screen. The percentage transmission may be determined by measuring the brightness (by any suitable means) of this second diffusing screen, with and without the material in position between the two screens. A source of light of high intensity, such as a 1,000-watt tungsten-filament projector lamp, is desirable.

"One suitable method of measuring this brightness is by means of a photo-electric photometer, of which the emission photo-cell and amplifying tubes are contained in a metal box, in the front face of which the second diffusing screen forms a window. The screen nearer the lamp may conveniently be about 5 in. in diameter, and the other screen not less than 2½ in. in diameter, or square shaped with sides of these dimensions. The photo-cell box is fixed in position to with its diffusing screen as close as possible to the first diffusing screen, and directly opposite to it.

"The average of the tests on at least four samples of the total light passing through the material, shall not exceed 0.001% of the light incident upon the material, and the light passing through any sample shall not exceed 0.003%.

"When photo-electric photometer test results on a comprehensive range of fabrics are available, it may be possible, by a visual method, qualitatively and rapidly to compare new samples with samples of known obscuration values."

As yet no official specifications or tests for black-out fabrics have been

adopted in this country. However, it is understood that OPM and the National Bureau of Standards are cooperating on development of such specifications and tests.

BLACK-OUT FABRICS can be divided into two classes: (1) fabrics having a utility value alone, and (2) fabrics having both a utility and a decorative value. Fabrics in Class 1 are employed for blacking-out factories, warehouses, etc. Fabrics in Class 2 are preferred for blacking-out houses, hotels, apartment buildings, etc. Fabrics in either Class 1 or Class 2 are employed for blacking-out stores, office buildings, etc.

For curtains, most popular fabrics of Class 1 are cotton warp sateens, filling sateens, double-face sateens, and 2 and 2 twills. Also used are reps, jeans, and cotton suiting fabrics. Approximately 80% of these fabrics are black; the other 20% are either dark blue, dark green, or dark brown. For window shades, a black opaque window shade cloth (Holland) is preferred. Rubberized fabrics and pyroxylin-coated fabrics are employed to a limited extent. Wool felt has also been recommended. Usually cotton materials are piece dyed with aniline black, logwood black, or sulphur colors, although some fast-to-light direct dyes are used. Ordinarily curtain materials are backfilled and friction calendered or, preferably, Shreiner calendered. The finish should be opaque and not too stiff so that the curtains will drape well and draw readily into folds. Typical of the constructions which have proved most satisfactory are the following:

5-harness filling sateen, 96 x 200; 50s warp, 70s filling.

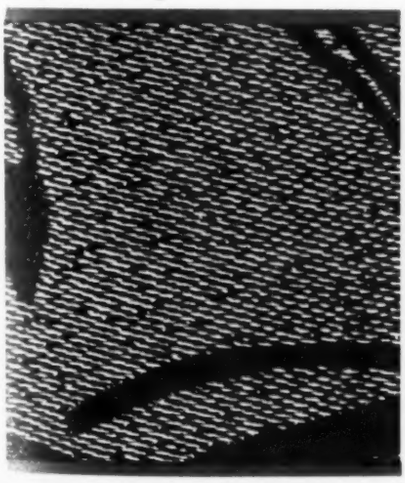


Fig. 1. Closely woven drapery fabric with high degree of opacity

5-harness filling sateen, 92 x 148; 32 warp, 40s filling.

8-harness warp sateen, 146 x 76, 32s warp, 24s filling.

Double-face sateen, with 4 and 4 filling, floats front and back arranged in sateen order, 70 x 145, 20s warp, 20s filling.

Just before the outbreak of the war in England, vast quantities of black fabrics were sold for household use. But once the first excitement was over, came a reaction to the "funereal" appearance of black curtains. A survey of over 2,000 families made in July, 1940, revealed that although 91.1% of the rooms occupied by those families were blacked-out, 40% of the people questioned described their arrangements as temporary and makeshift, and 97.8% of those who were using black curtains planned to abolish them as soon as possible. Use of lined curtains or draperies was the preferred method for blacking-out, and 25.1% of the housewives queried had already lined existing curtains.

A cotton fabric which has been popular for lining curtains or draperies is a filling sateen of the following construction: 70 x 140, 28s warp, 32s filling. Also used to some extent is a plain woven rubberized cotton fabric.

REQUIREMENTS FOR CURTAINS or draperies for household use are opacity, good draping and folding qualities, and attractive appearance in both daylight and artificial light. Practically any drapery fabric when lined with a black or dark-colored sateen or other suitable lining cloth satisfies these requirements. The one objection to draperies made with a closely woven lining fabric is that they are too high priced to permit their general use.

In the last year or so, however, several types of curtain drapery fabrics have been developed which meet the requirements mentioned above and which can be sold at reasonable prices. One fabric developed by Marshall & Aston, Ltd., Manchester, England, is illustrated in Fig. 1. This fabric is described as opaque, fadeless tapestry. Approximate construction is as follows: 38 x 66; 7s cotton warp, 9 turns S twist, dyed black; 150-den. viscose rayon filling, dyed medium blue.

Entirely different in the lower-price group is the fabric shown in Fig. 2. This is an end-and-end rayon rep which has been rubberized on the back. Approximate construction is as follows: 100 x 32; 150-den. viscose rayon warp, 2½ turns S twist, white; 10s cotton warp, 11 turns S twist, dyed medium blue. Another construction which has been given a rubberized back is rayon extra-warp brocade on plain-weave-cotton ground. These rubberized fabrics first were produced in black, but now are preferred in light and medium shades.

The Bleachers Association, Ltd., is producing an inexpensive, light-weight,

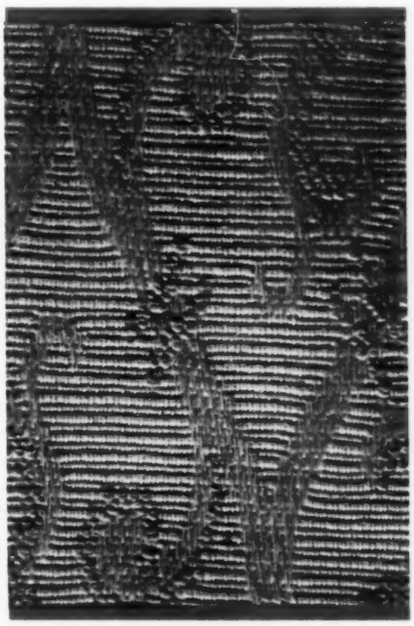


Fig. 2. Light-weight drapery fabric with rubberized back

coarse-weave cotton fabric, heavily calendered and doped black on one side (for the outside), and a bright- white-doped, damask-like surface on the other side. This fabric is similar to a book cloth, but is flexible, with the weave showing through the finish on both surfaces. It is said to give an attractive and cheerful interior.

Other materials which are being employed for black-out curtains include opaque-finished "oiled" silk or rayon and pyroxylin-coated fabrics. Still others are plush, velvet, velveteens, and velours, made with a closely woven base and a dense pile and dyed black or in dark shades.

Undoubtedly, official specifications and tests for opacity of black-out fabrics will be established in this country in the near future. In the meantime this résumé of British experience should aid American textile manufacturers in developing black-out materials which will be satisfactory from the standpoint of opacity, appearance, draping qualities, and price.

WAR-and Textiles

Search for Substitutes

Grows more intense in dye and chemical field

"**AMMONIA AND NITRIC ACID,** chlorine and sulphuric acid; synthetic rubber, alcohol, methanol, and formaldehyde are but a few of our chemical shortages. I sometimes tell my OPM colleagues that shortly about the only chemical raw material that won't be scarce will be 'coal, air, and water.' And there may be some question about coal." Thus wrote Donald M. Nelson, executive director, Supply Priorities and Allocations Board, in the November issue of *Chemical & Metallurgical Engineering*. In the textile industry, the growing shortage of many chemicals is bringing with it a problem which steadily is growing more acute. Production in many plants has been hampered by shortages of one chemical or another. Some mills processing Army goods have had to shut down their dyeing machines for several days at a time because of shortages of vat dyes. There are, however, a number of steps which individual textile mills and textile trade associations can take which will lessen the problem.

The first step is for each mill to analyze its requirements on the basis of the amount of each dye and chemical used last year and estimates as to the amount which will be needed this year for processing textiles for Government and for civilian purposes. The mill should determine how much of each material is in stock and how these stocks can be conserved; it should investigate fully all possible substitutes which could be used if supplies of any of the dyes and chemicals now employed are further curtailed or cut off. It should build up a list of alternate sources of supply for those chemicals it is using or may use.

Among the textile chemicals not mentioned above which are scarce are acetone, chlorine, cresylic acid, potassium permanganate, zinc hydrosulphite, and all chromium compounds. Others include acetic acid, oxalic acid, zinc oxide, titanium dioxide, neatsfoot oil, olive oil, tea seed oil, tapioca, sago, gum acacia, gum tragacanth, locust bean gum, gelatine, Japan wax, and albumen.

SUBSTITUTES SUGGESTED. At the annual meeting of the American Association of Textile Chemists & Colorists, Thomas H. Roberts, of Arnold Hoffman & Co., Inc., presented a paper for the Rhode Island Section, in which were discussed some of the substitutes for those materials which are scarce. The paper pointed out that corn, wheat, and potato starches have satisfactorily replaced the imported materials, such as tapioca and sago, although some readjustments of cooking methods are required. Chlorination and acetylation produce desirable properties in certain starches for particular applications. Gum acacia is being replaced with starch gums. Tragacanth finds substitutes in starch gums, alginates, and alkyl celluloses. Locust bean gum can be replaced with starch gums to an extent. Water-soluble cellulose derivatives, water-soluble resins, and dispersible resins take the place of gums in various applications.

Mr. Roberts stated also that thermosetting synthetic resin plastics bid fair permanently to replace albumen in textile processes. Dextrin with a resin binder is a useful substitute for gelatine; casein derivatives, polyvinyl alcohols and certain resins also are adaptable. Substitutes are being tried and developed for sulphonated olive, teaseed, palm, and coconut oils, mostly in corn, cottonseed, peanut, and soy bean oils—especially in blends; the so-called "synthetic" oils, prepared by rearrangement and reesterification of fatty acids, are very good; hydrogenation helps them. In wool processing a mixture of a fairly heavy mineral oil and coconut oil is a promising substitute for olive oil; cation-active compounds, amino condensates, and various other softeners are being used; tall oil is promising, because of low-titer fatty acids, in soaps, and emulsions.

As substitutes for Japan wax, blends of hydrogenated selected fats and some new waxes coming from South America, were suggested as being satisfactory. Solutions of ammonium sulphate and sulphuric acid can be used instead of acetic acid in dyeing of wool and in other processes. As a substitute for formaldehyde in aftertreating processes, aluminum acetate, lignin sulphonate, and copper sulphate are serviceable. As substitutes for vat dyes, certain sulphur colors are very good; pigment colors and the use of binders offer various degrees of hope.

At the same meeting the present writer made a recommendation which he now repeats; namely, that a special committee be appointed by the American Association of Textile Chemists & Colorists to act as a clearing house for the collection and dissemination of information on those textile chemicals which are difficult to obtain.

CONSERVATION OF CHEMICALS. Individual mills can do much to conserve on the use of chemicals. Unnecessary waste can be avoided, for example, by proper storekeeping methods and by adjustment of formulas so that the volume of processing solutions made up is not excessive for the amount of goods to be processed. Frequently the amount of chemicals needed for a given purpose can be reduced by a change in the process or the method of application. Installation of control instruments on slashers, scouring machines, dyeing machines, etc., often results in a saving.

Textile men should not hesitate to call on the dye and chemical companies for the expert advice they frequently are able to give on conservation and substitution of materials. Equally important, they should advise their suppliers as far in advance as possible as to their requirements and should order only those amounts of various dyes and chemicals that are actually needed.

One factor which has contributed to the shortage of certain dyes and chemicals has been unnecessarily stringent Government specifications for certain textile products. Thus, Army specifications have called for use of vat dyes on some materials which could well be dyed with other classes of colors. A review by OPM of Government specifications for textiles doubtless would disclose other possibilities for conserving on use of those dyes and chemicals which are the scarcest.

Textiles and-WAR

Fabrics For Military Use

Uniform twill modified; facing-cloth specification

FOR SOLDIERS UNIFORMS, the Army originally specified an 8.2-oz. combed-yarn twill made with ply yarns, warp and filling. In September, 1940, this department presented a digest of the original specification and gave manufacturing data and approximate gray construction required. Tightness of supply resulted in a broadening of the specification to include four types of cloth and, in January, 1941, TEXTILE WORLD presented the revised specification. Later a new specification, known as P.Q.D. No. 33, was issued. In view of the enormous yardage of fabrics purchased under this specification we present here a digest of the new specification.

Uniform twill is specified in four varieties, known as Type I, II, III, and IV. but in only one grade, "firsts." Cotton must be suitable in grade and staple, yarns must be clean and evenly spun, and the cloth must be clean, evenly woven, and free from defects which may affect serviceability or appearance. Color of finished cloth shall be as specified, and shade must match that of a standard sample. Fastness must be good when subjected to following tests: weather, exposure for 10, 20, and 30 days; laundering, as described in Federal Specification CCC-T-191a; bleaching, one hour at room temperature in hypochlorite solution containing 0.7% available chlorine.

Width, exclusive of selvage, may range from 28 to 57 in. Weave must be a 4-harness right-hand twill, 3 up, 1 down. Shrinkage of finished cloth when tested according to Federal Specification CCC-T-191a, must not exceed 1% in either direction. Finished cloth shall be closely singed, bleached, mercerized, and contain no sizing.

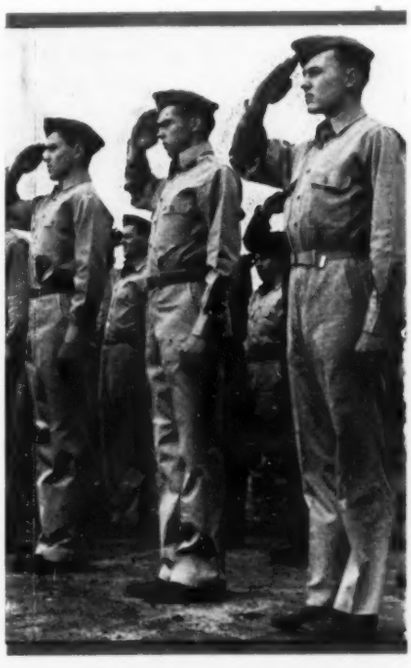
Type I—(finished) 116x56, 8.2 oz. per sq. yd., minimum breaking strength (1x1x3 grab method) 180x130 lb., 2-ply combed yarns in warp and filling. [Approximate gray construction—108x60, 2.00 sq. yd. per lb., 36/2 combed warp, ZS twist, 25/2 combed filling, ZS twist.]

Type II—(finished) 116x56, 7.8 to 8.6 oz. per sq. yd., minimum breaking strength (1x1x3 grab method) 180x110 lb., 2-ply combed warp, single combed filling. [Approximate gray construction—108x60, 2.00 sq. yd. per lb., 36/2 combed warp, ZS twist, 12.5s combed filling, S twist.]

Type III—(finished) 90x54, 7.8 to 8.6 oz. per sq. yd., minimum breaking strength (1x1x3 grab method) 140x90 lb., 2-ply combed warp, single combed filling. [Approximate gray construction—83x58, 2.00 sq. yd. per lb., 32/2 combed warp, ZS twist, 10s combed filling, S twist.]

Type IV—(finished) 116x56, 7.8 to 8.6 oz. per sq. yd., minimum breaking strength (1x1x3 grab method) 155x105 lb., single or 2-ply carded warp and filling. [Approximate gray construction—108x60, 2.00 sq. yd. per lb., 18s or 36/2 carded warp, 12.5s or 25/2 carded filling.]

WOOL FACING CLOTH in a 16-oz. weight is covered in specification No. 8-43B, which supersedes former requirements for fabric of this type. Essential technical data from the specification are detailed below; also included are manufacturing suggestions not specified by the government.



Enormous yardages of cotton uniform twill are being bought by QM under specification P.Q.D. No. 33

Stock—Fleece and/or pulled wool not lower than 64s grade; use of 25% noils of the same grade is permitted.

Yarn—Singles, spun on woolen system, for both warp and filling.

Physical Requirements — Minimum finished width, exclusive of selvages, 56 in.; weight per linear yard, minimum, 16 oz., maximum 17 oz. Minimum finished ends and picks per inch, 62x60; minimum finished breaking strength (1x1x3 grab test), 50 lb. warpwise, 42 lb. fillingwise. Weave, plain.

[Not given in the specification are the following suggested layouts: 3,700 ends including listing, 17 reed, 3 dent, 55/x picks at loom; 72½ in. wide.]

Warp and filling 7.60 Typp (4¾ run).

Warp	7.78 oz.
Plus 5%	.40 oz.
	8.18 oz.
Filling	8.39 oz.
	16.57 oz. at perch
Loss 14%	2.32 oz.
	14.15 oz.

Shrinkage 12%, or 4.4 in. per yd.

Finish 57 in. including listing, 16 oz. The yarns should not be spun too hard. To avoid excessive end breakage on the loom, the stock must be laid down carefully at the picker. Stock carbonizing is suggested.]

Color—As specified. Must show good fastness to crocking, dry cleaning, and weather.

Finish — Thoroughly scoured, properly fulled, carbonized if necessary, face evenly sheared, lustrous face finish.

[Not given in the specification are the following suggestions on finishing: The fabric should be fulled to 56 in. in width, and dried at 58 in. Care must be taken to have the pieces shrink in width and length at the same time. After the goods come out of washer, extract and dry, shear and press. To provide a lustrous face finish, it may be necessary to run the goods over a teasel gig, previous to shearing. If the goods are run over the gig, it is advisable to add to the shrinkage, so as to finish to the desired weight of 16 oz.]

(*Continued on page* 94)

WAR-and Textiles

Blending Wools For Army Fabrics

Rejections can be cut by proper preliminary methods

By WILLIAM F. NEUMANN

TO PRODUCE FOR VICTORY woolen fabrics of even texture, free of rowey and shaded places, it is of utmost importance that the stock first be properly mixed and blended. No other department can correct mistakes caused by this first process being carelessly carried out. This writer has often heard it said that the picker room is the most under-rated department in a woolen mill. The reason for this belief is that practically every mill has a different method of blending and applying emulsion, and that many mills use different types of picking machinery.

It does seem that it should be a simple matter to blend two or more kinds of colors of wool together, and spin a yarn from the blended materials. However, the materials to be blended are often radically different in physical structure. Further, the aim is to so mix them that the wools will be indistinguishable one from the other. When these facts are borne in mind, it can readily be seen that this process is a science, which requires in addition practical experience and a working knowledge of the types of stock and the respective mixes.

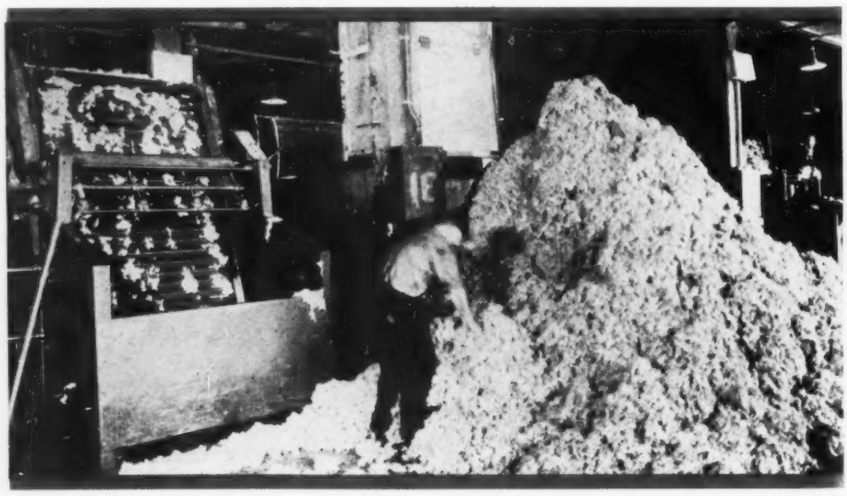
In making all-wool mixes such as are required by many Government specifications, it is of the utmost importance that the raw wool be well scoured. Partly scoured wool will dye unevenly, and if improperly blended can be a possible cause for specky and shaded cloth. After scouring, the wool should be well dried, at temperatures not exceeding 160° F. Higher temperatures may injure the wool fibers, leaving them harsh and brittle and making them more difficult to work in subsequent processes. Hence, an inferior product is likely to be obtained at every stage, at a greater cost, and with increased production of waste.

As all wool carries a certain amount of vegetable matter, it is important that this foreign material be removed by dusting, as soon as possible after drying. When large quantities of burrs are present, it becomes necessary to submit the wool to the burring process. Burrs are difficult to remove, and while some will drop out during mixing, blending, and carding, many are likely to pass through to the roving, making it twitty and uneven and, of course, poor in spinning qualities. Further, the more imperfections as regards burrs, the greater the time and expense will be required for burling and mending, and the more imperfect will be the final cloth.

After the stock has been scoured, dried and dyed to the colors desired, it is ready to be mixed with other stocks, according to the blend specifications. The mixing or picking process is divided into five parts; namely, weighing of the lot, laying of the blend, picking, oiling, and blowing. Each of these parts is an important operation, and all must be properly followed through if the desired results are to be obtained.

As often as not, after a blend of various colored wools has been matched up, an unskilled worker has the duty of weighing the various stocks preparatory to picking. And this in spite of the fact that matching of colors preparatory to making up a blend is a tedious and important operation, usually carried out by a skilled worker who has spent years learning this job. The weighing of stocks should always be in the hands of a dependable and responsible person. When several kinds of stock in varying percentages are mixed together to produce a given shade, a mistake of a few pounds one way or another can throw the whole lot off shade. Usually, the color matcher is blamed: a far better procedure is to place the duty of weighing lots in the hands of a capable worker, so it will not be necessary to gamble on off shade cloth.

LAYING OUT THE BLEND is the next step, after the proper quantities of each kind of stock going into a blend have been accurately weighed. This operation is comparatively simple since it is merely a question of spreading out the stock in layers, one above the other. Its simplicity is deceiving, however, for correct laying of the blend is vital. The important points to observe are that layers are even in thickness, that each layer is made up of the correct stock, and, that each of the various kinds of stock is properly distributed in the pile. As an example, one can assume that it is desired to lay down a 5,000 lb. mix for Army overcoating. Translating the specification percentage



Blending and picking should be considered a science; no other department can correct mistakes caused by carelessness in these preliminary processes

requirements to pounds indicates that the blend will include 2,750 lb. of 44s grade wool, 500 lb. of 58s grade wool, and 1,750 lb. of reworked wool. For purposes of illustration, it can also be assumed that the 44s grade wool and the reworked wool are the same color, while the 58s grade is undyed. Using a floor space of, say, 15 x 20 ft., a 275 lb. layer of 44s grade wool (1/10 of the total required poundage of this stock) is first spread. Next, a 175 lb. layer of reworked wool (again 1/10 of the total required) is spread, and finally a 50 lb. layer of 58s grade. This process is continued, layer on layer, until the entire lot has been batched up in ten uniform layers. Laying a blend in this manner gives a good average thickness of each material throughout the batch. There can be variations from this method, but it must be remembered that it is far better to err on the side of having layers too thin rather than too thick, since the thinner the layers the more thorough the mixing.

In a blend in which a comparatively large quantity of one kind of wool is to be mixed with several small quantities of dyed or undyed wools, it is advisable first to make what is known as a temporary mix. For example, let us assume a blend made up of 2,550 lb. of 44s grade dyed olive, 200 lb. of 44s grade undyed, 150 lb. 58s grade dyed green, 150 lb. 58s grade dyed yellow, 200 lb. 58s grade undyed, and 1,750 lb. reworked stock. In this example, the temporary mix would be made by batching down in layers 850 lb. of 44s grade dyed olive, 200 lb. 44s grade undyed, 200 lb. 58s grade undyed, 150 lb. 44s grade dyed green, and 150 lb. 44s grade dyed yellow. After this pile has been run once through the picker, the final blend is laid down using the 1,550 lb. of temporary mix as one color, and laying it in layers with the remaining 1,700 lb. of 44s grade and the 1,750 lb. of reworked wool. This method adds to the work and the cost of making a mix, but will make thoroughly and evenly mixed blends much more sure of attainment.

It must also be remembered that the success of mixing depends largely on the manner in which the pile is cut prior to feeding into the picker. The stock must always be taken from top to bottom so as to feed as nearly as possible equal quantities of the components of the blend to the picker at all times. Obviously, if the stock were taken from along the top of the pile, the effect and advantage of careful laying out of the blend would be practically eliminated.

VEGETABLE FIBERS mixed with wool are called for in certain Government specifications. In such cases, it is advisable first to run the vegetable fibers through a picker before making the final pile. This renders the stock more open and fluffy and the individual fibers of this stock will mix more readily with the individual fibers of the wool. Also, it is advisable in ordinary cases that no oil be put directly on to vegetable fibers. Oil causes these to mat together, hence they are likely not to mix thoroughly with the wool fibers. This can cause uneven yarn and streaky cloth.

An example will illustrate the procedure on this type of blend. One specification calls for use of 60% wool, 10% noils, 10% reprocessed wool, and 20% of either cotton or rayon. First, a pile is made of the cotton or rayon; this is run once through the picker. Next, a pile is made of the various wool stocks, following the procedure given above for all-wool mixes. This pile is also run through a picker once, at which time the required amount of emulsion is put on the stock. The two temporary mixes are then mixed in the usual manner, by making layers of the two different piles, one on top of the other, until the batch is completely piled. The final pile is then run through the picker as many times as necessary to insure thorough mixing.

There is a wide difference of opinion as to the number of times stock should be run through the mixer picker. This writer firmly believes that in the production of Government cloths of solid shades, the stock should be picked three times. This will assure satisfactory mixing of the various fibers, which in turn will help in producing even yarns. It also will eliminate the common fault of making the first breaker card do the work of a mixing picker. In the case of mills equipped with new weighing, tandem picking, and mechanical blending systems, the above remarks are not all applicable.

Picking machinery should be kept in good repair. Many mills have only one picker and a major breakdown at this point can soon tie up the whole mill, and with it a small part, at least, of the nation's victory program. Pickers allowed to run with worn out teeth certainly can not produce good results. Some mills also make the mistake of trying to boost picker-room production by speeding up cylinders to a point much higher than the machine builders recommend. This most certainly is false economy. Not only will the increased speed reduce the useful life of the picker, but it will also cause broken and damaged fibers, which may prove disastrous in the finished cloth.

All pickers should be equipped with a mechanical device for applying oil directly to the stock as it passes from feed box to feed rolls, since it is very important that the oil be distributed over the fibers as evenly as possible. When oil is unevenly distributed over the stock, the fact will surely be noticed in the carding and spinning, and may result in inferior yarns. As conditions vary in different mills, the question of how much oil should be applied to a given number of pounds is a local problem, which must be worked out by experimenting with small lots until best results are obtained. It must be remembered, however, that under-oiling will permit damage to fibers during carding, and cause excess fly and waste. Over-oiling will cause gumming up of cards, and uneven and weak yarns.

When a mix made up of various kinds of fibers is blown into a bin, the heavier fibers are likely to fall straight down while the lighter fibers are blown around the edges of the pile. This separation of the fibers will undo care taken up to this point, if suitable provisions are not taken to eliminate such a condition. A common practice is to have some sort of condenser at the end of the blower pipe which will discharge the air pressure and allow all fibers to drop straight down. It is also good practice to have a man in the bin, while the stock is being blown, to spread the stock evenly over the entire pile.

When the card room is running low on stock and a lot is being run through the picker for the last time, it sometimes happens that some of the stock is removed from the picker room before the complete lot is finished. This is very poor practice and a sure way of making streaky cloth. Some mills even make a practice, when picking large lots, of filling up one card-room bin with, say, 3,500 lb. and feeding this to the cards. Then, when this bin becomes empty another 3,500 lb. is blown, etc. To make matters worse, all yarn spun from this stock is woven up as one lot. The result of this system, as carried out in one mill of the writer's acquaintance, was numerous rejections due to streaks. When this practice of blowing the stock in small amounts was stopped, the streaky cloth disappeared.

WAR-and Textiles

British "Concentration" Progress

Qualified mills continue; others close down—Utility cloth

By G. ABRAHAMSON

Kent, England

"CONCENTRATION OF PRODUCTION" has by now been completed in the spinning and weaving sections of the British cotton industry, so much so in fact that the defects of the new system are already becoming evident. Production capacity in the "nucleus" mills, i.e. those which are allowed to go on, has been found insufficient to cope with all important demands, and if the export trade, possibly under arrangements with the Russian Government, expands, serious difficulties may be encountered.

Out of close to 2,000 firms in cotton manufacturing which have been classified so far under the concentration scheme, about 60% have been allowed to continue operations. Most of the remaining firms have closed down, or will do so in the near future, but the transfer of labor set free in these mills to other employment meets with some difficulty, and much persuasion may be necessary to make women, who have spent their lives in cotton mills, change to entirely different work.

In the finishing section of the Lancashire cotton industry concentration has not yet progressed very far, and the position in the woolen trade awaits further clarification. Woolen manufacturers working at 80% or more of normal activity have been assured "nucleus" status. Others have been divided into two groups: those who must take up additional operations to qualify for "nucleus" status, and those who are expected to amalgamate or close down. Only one section of the woolen trade seems to have been left unaffected by the concentration scheme —the woolcombers, who carried out a rationalization plan some years ago and are therefore already in line with the Government scheme.

Preparations for concentration have had some unexpected effects in the textile markets. Prices for woolen yarns, for instance, have remained below the official maxima because spinners accepted export and other orders at lower quotations in hope of improving their position with regard to the concentration, and the distribution of raw wool. Less inclination for concessions has, however, been observed more recently, and yarn prices have consequently risen. The authorities are not favorably impressed by exporters' efforts to increase shipments of woolen yarns.

UTILITY CLOTH has already appeared on the market, and manufacturers lacking other business are generally eager to participate in this trade which promises to take up a large part of the domestic market. Utility cottons, for instance, include so varied a range of products as poplin shirtings and cambrics, velveteens and corduroys for slacks and lumber jackets, dyed and printed dress materials, ginghams and cotton gabardines, Bedford cords, corset cloths, pajama fabrics, linings, etc.

There will be a similar wide range of utility cloths in the woolen trade. The exact qualities, materials and designs are fixed by Board of Trade officials in conjunction with a panel of experts from the industries. There are distinctive markings for utility materials in all stages of production and distribution. And prices and margins have been fixed throughout the process of manufacture.

To give an example, a certain cloth for women's outer-clothing, not over 13 oz., costs 3s. 6d. to 4s. per yard; the retail price of the finished coat will be 63s., a price which is very competitive considering present conditions in the British textile trade. There will be better qualities at 78s. and 95s. Maximum allowances have been fixed throughout at 7½% of cost of production and sale for the maker-up, at 20% of cost for the wholesaler, and at 33⅓% for the retailer.

Utility clothing is a somewhat misleading term as it covers a wide range of clothing for all purposes. The public has been prepared for some such standardisation by the large organizations of the "multiple tailors," or chain clothiers, in American lingoe. These latter may experience difficulty in competing with the Government-sponsored utility clothes.

Makers of the best woolen materials, on the other hand, have received great stimulus from the coupon trading system, since buyers, unable to purchase the usual large number of garments, endeavor to make the most of their coupons by buying the best qualities. Civilian orders for winter goods, both men's and women's, are plentiful, and some doubt is felt as to the adequacy of raw material when so much is required for the Government's utility clothing. Chain store firms go in the other direction; in preparing against competition of utility clothes, they generally buy material for cheaper suits, which can be retailed below 100s.

The rationing scheme presents some delicate problems. A number of spinners, for instance, have large stocks of blended yarns containing camel and goat hair, rabbit wool and alpaca, as nobody wants to use his quota for such unsaleable materials.

THE DIRECTORATE of Civilian Clothing has pointed out that retailers must not buy "oiled wool" material. This consists of thick wool yarn and is used in heavy sea-boot socks and stockings for naval use because of their water-repellency. The Navy, however, does not make the heaviest demands for specially proofed textiles. The sailors seem to stick to their oil-skins and tarpaulins, though the new life-saving jackets, inflatable waistcoats and greatcoats embody some new materials.

The Army is using proofed fabrics for tent cloths, ground sheets, kitbags, hoods, camouflage cloths on motor vehicles, camouflage nettings, haversacks, arm covers and other containers. Demands of the Air Force are even more varied, including fabrics for barrage balloons, collapsible dingies, air crews' flying suits and other special garments, all of which pass through the proofer's hands. Specifications for rot-proofed, anti-shrinking, fire-resistant materials and similar cloths are very strict in the sense that the fulfilment of certain specifications is demanded.

Textiles and-**WAR**

For Faster War-Fabric Production

Mills Mill modernizes plant to increase capacity

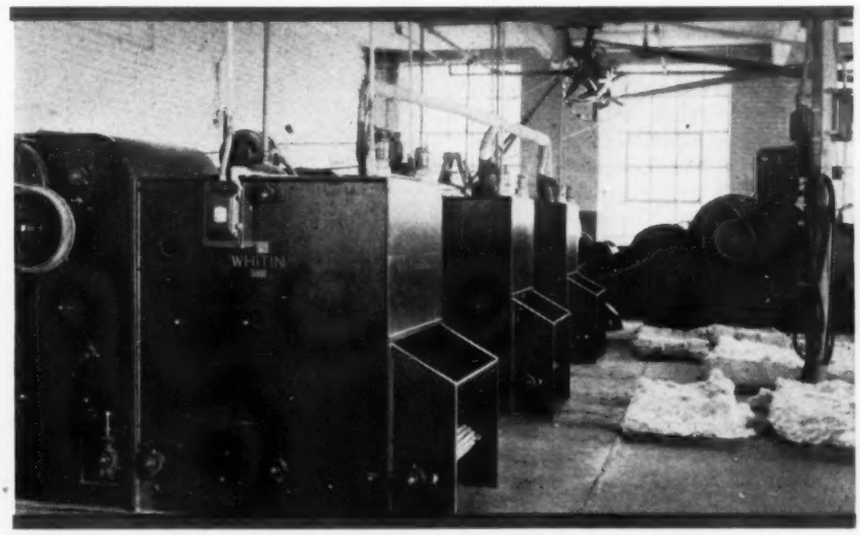
TO INCREASE PRODUCTION of fabrics for military purposes, to enable more efficient production of such fabrics, and to make possible the production of a wider range of fabrics were the aims of the modernization program recently completed at the No. 1 plant of Mills Mill, Greenville, S. C. Work of overhauling and replacing machinery extended through all departments, from opening through weaving. At the same time, power transmission and lighting facilities received considerable attention, and the mill and village buildings were repaired where necessary and painted throughout.

Capacity has been increased from approximately 75,000 to about 110,000 lb. of cotton per week. In revamping the opening room, not only was the increased capacity provided for, but provision was made for producing a more uniform blend. Where formerly there were two lines of opening, each beginning with a hopper feeder, the arrangement now consists of two parallel lattice aprons, each of which is fed by three Whitin blending feeders. Each line feeds into a Whitin vertical opener, which is followed by Whitin down-stroke beater. The present arrangement permits a blend from approximately twice as many bales as the former opening-room setup. Feeding of the opening machines is controlled through mercury switches and relay system from the hoppers of the pickers.

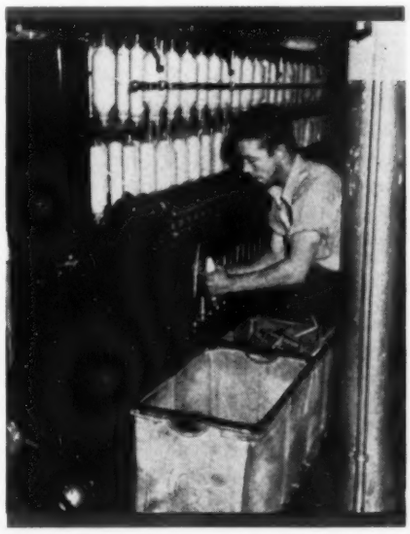
In the card room, 14 new Whitin cards were installed; all existing drawing frames were thoroughly overhauled, and 30 deliveries of Saco-Lowell drawing were added.

Roving frames were replaced throughout with new Whitin machines. The new frames provide for two ranges of yarn numbers—coarse and medium yarns. Four 9x4½ Inter-Draft slubbers of 120 spindles each produce roving, which is spun directly into the coarse yarns. Four conventional-draft 10x5 slubbers of 102 spindles each produce roving which subsequently goes to fourteen 8x1 long-draft 144-spindle speeders, and then is spun into the medium-count yarns.

Spinning spindles have been reduced from 34,032 to 25,456. However, due to increased speeds and larger packages of the new frames, spinning capacity has been increased. Thirty-two new Whitin long-draft filling spinning frames were installed. The frames are 3-in. gage, 300-spindle machines, and have the 3-roll Casablancas long-draft system. They are individually driven by 10-hp. G.E. Motors, and transmission of power is by V-belt. Allis-Chalmers variable-pitch sheaves on the motors allow frame speeds to be changed in 15 to 20 minutes. Creels of the new filling frames will accommodate either 8x4 or 9x4½ roving bobbins.



One section of three Whitin blending feeders; this installation greatly increases blending possibilities



Long-draft filling frames are individually driven; through use of variable-pitch sheaves on motor pulleys, frame speeds can be changed in 15 to 20 min.

Existing Whitin warp spinning frames were retained, but were equipped with Whitin long-draft roll assemblies and gearing. The warp frames, consisting of 34 3¼-in. gage, 252-spindle frames and 14 3½-in. gage, 228-spindle frames, all with separators, are group driven. Two groups of eight frames each are driven by 50-hp., Allis-Chalmers and Westinghouse motors. Other groups of two and three frames each are driven respectively by G.E. 15-hp. and Westinghouse 25-hp. motors.

AN ADDITION to warping equipment was a Cocker high-speed, magazine-creel warper which uses cones wound on two recently installed Model 102 Foster winders having 100 and 120 spindles, respectively.

An existing Barber-Colman spooler

WAR-and Textiles

was equipped with a Barber-Colman cleaning system, and was changed to a four-count machine. Other winding equipment installed included four 21-spindle Whitin-Schweiter winders, which replaced nine 20-spindle filling winders. The new winders occupy slightly less floor space than the old machines and give the same production. They have magazine cone creels and double disk-tension, and are individually driven by Westinghouse motors.

To the two-cylinder Cohoes slashers in use, third cylinders were added to increase speed and drying capacity, and an additional Saco-Lowell two-cylinder slasher was purchased. The latter machine was equipped with PIV gear stretch control made by Link-Belt Co.

Cam looms in the weave room were equipped with spring tops, feelers, and thread cutters, and shuttle size was increased to accommodate 8-in. bobbins. Installation of this equipment makes possible the production of a wider range of weaves and constructions. In addition, all looms were overhauled.

POWER for running the plant formerly was supplied by a Watts-Campbell Corliss steam engine. The entire mill is now electrified, and the room which housed the steam engine has been refitted and converted into a machine shop, complete with everything including lockers and showers for the employees. After removal of the Corliss engine, work of remodeling the engine room was done by Fiske-Carter Construction Co.

Model 102 Foster winders wind cones for high-speed warping

For painting the interior of the mill, U. S. Gutta Percha Barreled Sunlight was used. Mill officials estimate that the painting increased effective light by approximately 20%, and state that it has greatly decreased use of electric lights.

On the third and fourth floors, which house carding and spinning departments, RLM incandescent lamp reflectors housing 300-watt bulbs have increased the amount of light in working areas and done much to better both working conditions and quality of work. Weave rooms on the two lower floors have been equipped with G. E. 60-in. fluorescent lamps, which decrease shadows and enable employees to achieve greater efficiency in tending the looms.

Engineering of the project was done by J. E. Sirrine & Co., Greenville, S. C., and the electrical work was carried out by Huntington & Guerry, Inc., Greenville, S. C.

As a result of the program, the mill, which formerly specialized in twills, drills, and checks with weaves requiring no more than three harness, now is capable of producing all types of cam-woven carded-yarn fabrics specified for our armed forces which require no more than six harness and do not exceed approximately 9 oz. per yd. in weight.

Winning the War the Easy Way

MOST OF THE WAYS of winning the war are hard ones. But there is one easy way, in which fortunately the great mass of the American people can participate: the purchase of Defense Bonds and Stamps. In this savings program, employers can be of inestimable help to the country if they will adopt immediately the payroll allotment plan for the sale of Defense Bonds and Stamps.

That plan was developed by the Treasury Department with the cooperation of businessmen. It is now operating successfully in thousands of companies engaged in all types of business. It is voluntary on the part of both employer and employee.

Like most efficient systems, it is simple. All the employer has to do is to offer his employees the opportunity of having a fixed sum allotted from each pay envelope to the purchase of Defense Bonds. The employer holds these funds in a separate bank account and delivers a bond to an employee each time his or her allotments accumulate to a sufficient amount.

The essence of this job is speed. Help can be secured from the local Defense Savings Committee, which will send a trained representative to assist in putting the plan to work. If the employer cannot get in touch with his local committee, he can write to the Treasury Department, Section A, 709-12th St., N. W., Washington, D. C. The important thing is to *act now.*

Associations can help greatly in this effort. As an example, a Cotton Goods Committee of the Greater New York Defense Savings Program has been formed, with W. Ray Bell, president of the Association of Cotton Textile Merchants, as chairman. W. P. Fickett, president of the Textile Fabrics Association, Alice C. Moore, secretary of the National Association of Finishers of Textile Fabrics, and Louis Lowinson, president of the Textile Brokers Association, will serve as vice-chairmen undertaking the responsibility for their respective groups. The principal objective of the new committee is to establish the payroll deduction plan in every firm in Worth Street, and to give every aid and encouragement to efforts of these firms to attain 100% enrollment of officers and employees in the plan.

If anybody thinks this is not important, here are a few of the ways in which the Defense Savings Payroll Allotment Plan helps the country:

It provides money now for vital military equipment.

It gives every American wage earner the opportunity for financial participation in National Defense.

By storing up wages, it will reduce the current demand for consumer goods while they are scarce, thus retarding inflation.

As it succeeds in retarding inflation, it will reduce the cost of *all* materials, including defense materials.

As it succeeds in reducing the cost of defense, it will reduce emergency taxes.

It reduces the percentage of defense financing that must be placed with banks, thus putting our emergency financing on a sounder basis.

It builds a reserve buying power for the post-war purchase of civilian goods to keep our factories running after the war.

It will help reduce the ranks of the needy during post-war re-adjustment.

THE EDITOR SAYS

A Textile War Council Needed

FOR YEARS we have advocated an over-all organization representing all branches and functions of the textile industry. We originally proposed an American Textile Institute, into which would be merged all existing textile associations. When it became apparent that the diversity of views among groups made such an ideal not easily attainable, we compromised with the suggestion that a Textile Council be set up to coordinate the activities of all divisions of the industry. That idea met with general approval, and resulted in limited action. The National Council of Textile Industries was formed under the leadership of Dr. Claudius T. Murchison, president of the Cotton-Textile Institute. That Council includes the cotton, rayon and silk organizations.

Our suggestion of yesterday becomes a "must" today. There must immediately be set up a Textile War Council, representing not only the cotton, rayon and silk divisions, but also the wool, hosiery, underwear, outerwear, finishing, and related branches.

Such a Council should be empowered to represent the entire textile industry in an all-out mobilization of the forces of this industry for the effective prosecution of the war and the realization of ultimate victory.

Such a Council would not fall under the ban which OPM and OPA have placed upon trade associations. It would be a completely representative group, comprising both association executives and industry leaders, safeguarding no private interest, but serving only the public interest.

Such a Council, we are confident, would be welcomed by OPM, OPA, QM, and all the other Governmental agencies of industrial mobilization.

Such a Council would make unnecessary the appointment, by Governmental agencies, of disjointed industry committees, representing diverse interests and viewpoints, and responsible to no central organization.

Such a Council would make articulate the desire of the textile industry to see this war through, to the ultimate of its resources. As such, it would be infinitely preferable to an organization imposed by the Government upon the industry. It would be democratic procedure at its best.

As a starting point, we suggest that a meeting be called, at once, of the top executives of all the textile associations, and of industry leaders whom each might designate, for the single purpose of forming a Textile War Council, and of empowering it with all needed authority for the duration.

Since someone must start this, we suggest that Dr. Murchison, as the head of the largest textile organization, and as chairman of the National Council of Textile Industries, call such a meeting. After convening, the representatives of all the various divisions of the industry can decide what form of organization is needed, and what type of executive board should direct it.

In the face of the dangers which beset this country, the Textile War Council must ignore all petty jealousies and concentrate on a single objective: the mobilization of the textile industry for the defeat of Hitler.

This is a *must*. It should be accomplished within the next month.

24-Hour Service

The President of the United States is authority for the recommendation that this country go on a 24-hour day, seven-day week, basis.

That's a reasonable—and in fact imperative—recommendation.

So, why not?

Because we have a 40-hour week on the statutes.

Sure, industry can pay time and a half for overtime above 40 hours. But the increased cost may make it impossible, in many industries, to pay such overtime and retain economic stability, what with taxes and all.

The only answer is to discard the 40-hour week—and go on a 48-hour week, at the base rate.

Someone suggested that the labor bloc in Congress wouldn't permit such a legislative change.

But Congress was in the mood to conscript men from 20 to 44, at a nominal wage, for military service. Congress was in the mood to conscript capital by tax measures; and this form of conscription has only started.

Why can't Congress conscript labor to the mild degree of a lengthening of the work week per man, at the same hourly wage—which certainly is not niggardly in defense industries?

BUY DEFENSE BONDS
AND SAVINGS STAMPS

A United Voice

No one organization speaks to and for more of the vital links in the production line which will beat Hitler than does McGraw-Hill.

Consequently, the statement "What Can I Do?" by James H. McGraw, Jr., president, which appears opposite page 48 of this issue of TEXTILE WORLD, and in every McGraw-Hill publication simultaneously, represents the most effective challenge to industry that the war has produced.

Since it is directed to employees as much as to employers, McGraw-Hill has decided to make a reasonable number of reprints available to all who want them, and larger quantities at cost. Such reprints will not include the last section of the statement, which refers to McGraw-Hill service to industry.

Let us know how many you want.

War Averts Textile Slump

For the last three years, sinister events have had a habit of saving the textile industry from the doldrums. The outbreak of war in the fall of 1939 gave it a boost. The start of our own defense program in the spring of 1940 gave it a boom. That boom was still in effect on the Pearl Harbor Sunday.

But before that Sunday, there were indications that inventory accumulations of textiles in distributors' hands were not too healthy. We sounded that warning in these columns.

Now, for the time being at least, all worries are frozen. Textile production must go all-out, to take care of unknown millions of soldiers.

Later, the problem will hit us in the face again, and on a grander scale. But that will have to be faced when it comes.

Best Line of the Month

"Mussolini: A Caesar in pink lingerie . . . A dud of a Duce."—Gabriel Heatter.

War Dominates Outlook for 1942

Reports from all industries show this as overshadowing all factors

THIS WILL BE A MILITARY YEAR for business, as well as for the armed forces. This theme, sounded in the first of the year-end statements abstracted below, reverberates through all the others. The opinions are from McGraw-Hill editors in other fields of industry, and from observers in the textile industry specifically.—*Editor.*

General Business

"The war outlook is now the business outlook. Not only will American sentiment during 1942 move up and down with the fortunes of war, but all industrial activity will be concentrated toward producing the necessary fighting equipment for our Army and Navy. The exigencies of battle will determine how much of what type of goods American factories will produce—whether tanks, planes, shoes or automobiles, etc. And the standard of living—the supply of consumer goods available for civilians—is bound to decline. . . . The country will settle down to the long, hard grind of turning out the stuff that wars are won with. That's a tremendous job,—with no let-up in sight. During the World War it took seven men on the home front to equip one man at the battlefront. Today, so mechanized has warfare become, that in this war the ratio is 18 workers to one fighting man."—J. A. Livingston, economist, *Business Week.*

Aviation

"Fortunately for our nation, the declarations of war by the Axis powers have found our aviation industry well prepared on all fronts. During 1941 expansion of military aviation in the United States has progressed as rapidly as humanly possible. Military aircraft production has increased three-fold over that of 1940, the total for this year being approximately 20,000. More important than the actual production is the rapidly increasing productive capacity of the aviation industry which reached a rate of well over 2000 planes per month by the year-end and should reach 3000 per month by the summer of 1943. Productive floor space in the airframe, engine, and propeller industries at the fall of the year totaled more than 32,000,000 sq.ft. and direct labor in these industries, 220,000 persons. Total floor space and personnel is 25-30% higher."—Leslie E. Neville, editor, *Aviation.*

Machine Tools

"Over $1,000,000,000 of machine tools will be produced in the United States during 1942. All of these machine tools, which will be turned out at a rate of more than 1,200 units a day, will be used to tool up new defense plants or to retool existing factories being converted from peacetime to wartime operations. The only exceptions will be tools shipped to Britain, Russia and other countries aiding in defeating Hitler. The volume of machine tool output the coming year will be limited only by the industry's capacity to produce. In a normal year machine tool builders do a business of $100,000,000 annually. Production in 1939 rose to $200,000,000. When the defense program required almost incredible quantities of machine tools, the industry expanded its output to $442,000,000 in 1940. During the last year shipments soared to more than $750,000,000. Today machine tool builders are operating at over nine times their normal volume and over three times the volume attained in 1918 when the industrial effort in the First World War was at its peak."—Burnham Finney, editor, *American Machinist.*

Construction

"Building for defense is a thing of the past. The construction industry's new standard is emblazoned 'Building for Battle.' And it can be raised with confidence, for in 1941 the construction industry handled more contracts than ever before in history, thereby shattering the record of 1928 which had come to be accepted throughout the lean Thirties as a never-to-be-repeated attainment. The $11,396,000,000 worth of 1941 construction contracts (which doesn't take into account hundreds of millions let for work in the island bases, Alaska and Panama) thus gives new dimensions to an industry that has always been considered to be one of our largest. Whether these dimensions will shrink or expand during the year now beginning depends upon how much progress civilian construction can make in the face of priorities, and upon how much the unfolding of events on the battlefronts may increase our war construction needs."—Waldo G. Bowman, editor, *Engineering News-Record.*

Chemicals

"The chemical industry enters the new year faced with the task of meeting a demand for most of its products far beyond anything it has yet experienced. War requirements for explosives and other chemical munitions are progressively increasing. Many other branches of the industry that indirectly serve defense needs are not only working at full capacity, but will undergo expansion in the near future. As chemical manufacturers are operating at the limit of their capacity, it is evident that these extra demands can be met only by corresponding increases in production. Already there are reports of startling increases among the Government-owned plants and that extensive expansions are under way at privately-owned plants."—Sidney D. Kirkpatrick, editor, *Chemical & Metallurgical Engineering.*

Electric Utilities

"The output of kilowatt-hours of electric utilities in 1941 will be approximately 164 billions, the largest gross increase, 20 billions, in any year. This has not been accompanied with an equally sharp rise in kilowatt demand, due to the longer hours of industrial operation. Residential and commercial building use of electricity has shown a less rapid increase than in former years. Kilowatt-hour output over the next year may be expected to continue to increase but not at the same

acceleration as during the previous twelve months. This increase will come from extended hours of industrial operations and from new defense plant. Because of restricted volume of appliances, residential and commercial utilization will grow at a decreasing pace. . . . There is also the possibility of power rationing in some instances where the growth in defense load has been faster than any forecasting could have provided for, as well as in places where serious water deficiency may be a strain on the system. If, as OPM's Knudsen states, we are to reach the peak of defense production in 1942, it is not unlikely that the 1942 power peaks will show only a small gain over 1941."—S. B. WILLIAMS, editor, *Electrical World.*

The Textile Outlook

TEXTILE ACTIVITY IN 1941 shattered all past records to bits and set a new annual high for the third successive time—a procedure hitherto unknown in an industry which had presumably been doomed to a two-year cycle: a pattern of one good year followed by one off year. As for 1942, the formal entry of this country into the war promises a continued high production rate to meet sharply increased Government purchases of textiles.

First, as to the performance: TEXTILE WORLD's index of mill activity for 1941 will approximate 185, on the basis of 1923-25 as 100. This will represent an increase of one-third over the index of 142 for 1940, which in turn was 8% over 1939's index of 132, which again in turn was 28% over the 1938 index of 103. Just by way of comparison with a better-known year, the 1929 index was only 115!

By individual branches of the industry, on the basis of incomplete statistical returns, cotton consumption in 1941 exceeded that of 1940 by about one-third; wool consumption increased by at least one-half; silk, on the way out, dropped more than one-third; filament rayon made a gain of about one-sixth, and rayon staple use increased about one-third.

Now, as to the future: The inevitable result of our formal entry into the war will be to increase Government purchases of textiles by almost any imaginable factor. The fanciful stories, heard heretofore, of an Army up to 5,000,000, or even more, may become fact. This will place a very serious burden upon production facilities, already working at capacity. It will divert, for the time being at least, the threat of a market-break, due to inventory accumulations in distributors' hands, which was becoming dimly apparent on the textile horizon before war broke out.

On the other hand, this increase in Government purchasing will still further reduce the production of goods for civilian use, because of shortage of both material and labor. Consumers' appetites will be whetted by the resulting shortages, but their ability to buy will be gradually reduced by higher taxes.

The net effect of these, and many other impulses, upon the textile industry will be the continuation—for the immediate future, at least—of record-breaking production—with, it is to be hoped, the also immediate discard of the 40-hour work-week limitation, plus undoubtedly a continually decreasing profit margin, due to increased taxes and increased Government control.

Beyond that short-term view, there looms the long-term possibility of the gradual elimination of marginal plants as allocation of materials and of labor becomes more and more a reality. That has happened in England, and it can easily happen here.

Among the less cosmic, but certainly more personal, textile trends, is the elimination of silk hosiery as a national institution. Nylon—or what the Government doesn't use of it—rayon, and cotton are the obvious substitutes. Bare legs, embellished by a synthetic tan, or even by a painted seam, are also possibilities. Silk lingerie may become museum pieces.

Fortunately, no price—not even bare legs—is too high to pay for doing the job this country has been forced to take on, and doing it quickly and well. —DOUGLAS G. WOOLF, editor, TEXTILE WORLD.

* * *

"The cotton textile industry enters the new year with its productive equipment operating at the highest rate in history and with every prospect that the record breaking output achieved in 1941 will be exceeded in the next 12 months. About 20% of the 1941 output of cotton goods went into strictly military channels while another 20% was taken up by that section of our industrial establishment which is engaged in the main in forging the instruments of war. The remainder went into the customary 1,200 and more uses for cotton products, many of which have assumed a wartime aspect in recent weeks. The industry over the next few months is likely to find the shift from a defense to an actual wartime basis as abrupt and as complicated as the change 18 months ago from peacetime to rearmament."—DR. C. T. MURCHISON, president, Cotton-Textile Institute.

* * *

"All handlers of textile products have shared generously in a profitable year. 1942 individual results are likely to be less uniform, and total profits of the industry less generous.

"Production in such staples as print cloths despite the record-breaking consumption by our cotton mills is less than requirements, and will continue to be for some time. The present weekly output of these fabrics is considerably lower than it was in the first six months of 1941. The diversion of loomage to other fabrics has been larger than many have recognized.

"The reduction in spindleage and loomage capable of producing combed cotton goods has been somewhat overdone, especially in the face of the extraordinary demands created by the emergency. The menace of oversupply of combed textiles is remote.

"Every pound of rayon yarn or staple fiber which can be produced will be wanted. Increasing percentages will be absorbed by 'defense,' 'lend-lease' and 'good neighbor' requirements. Weavers will have difficulty feeding their looms and spindles.

"A condition of textile starvation is fast becoming a reality throughout the European continent and in the Orient. After the conflict, and indeed while it is still raging, the United States will find itself the chief source of textile supply. As an underlying assurance for maintained absorption of our products, this consideration cannot be overlooked."—SIDNEY SCHEUER, Scheuer & Co.

* * *

"All indications point to decreased civilian production of knit and woven athletic underwear in 1942, due to (1) well-stocked shelves and forward buying of wholesalers, retailers and consumers; (2) decreased consumer purchasing power because of high taxes, priority unemployment and earnings diverted to the purchase of defense bonds; (3) scarcity of raw materials. To balance this, there is every indication that Government needs will far exceed those of 1941.

"However, starting a new year with low stocks and high unfilled orders, our mills are in an excellent position to meet any eventuality and should have a busy and profitable year."—ROY A. CHENEY, president, Underwear Institute.

Soaking Rayon For Hosiery

Hints on selection and application of yarn lubricants and on twist setting

By C. W. BENDIGO

IN CHANGING from silk throwing to rayon throwing for hosiery, throwsters are finding that the soaking operation offers one of the most serious problems. Despite all the studies made of this operation and the material published, this is probably the least understood of all throwing operations. Essentially, it is quite simple if a few fundamentals are constantly remembered.

In soaking baths for viscose rayon there are only four elements to be considered: lubricant, size, tint, and water. For hosiery, the first of these is by far the most important. Its essential purpose is to make the yarn run better by giving it internal lubrication to assist twisting, and surface lubrication so that it will wind and knit with a minimum of trouble.

For low-twist yarns (under 20 turns), rayon prepared for knitting usually has sufficient oil applied by the yarn producer and should not need further soaking or oiling by the throwster. Above 20 turns, and certainly when 30 or more are inserted, best results require soaking. Soaking is preferable to oiling, as it permits greater uniformity and a minimum of stripping off or gumming.

Selection of the proper soaking oil is complicated by the scarcity of certain materials and by the fact that most silk throwsters still have on their hands a stock of silk soaking oils. Silk oils are unsuitable for rayon if they contain a hygroscopic agent or if they tend to exhaust out of the bath (which was desirable for silk). Rayon should not be thrown wet, as this practice will result in uneven stretching and more frequent breakage. An economical and satisfactory method for rayon soaking is the standing tub method, where the bath is re-used for several thousand pounds of rayon before it is discarded. In extracting, the throwster should take care that each batch retains the same amount of solution—usually 95 to 100% of the weight of the yarn.

Returning to the oil used, in actual practice the fat content of an oil is not a true index of its desirability. For example, one sulphonated oil of 50% concentration might be better than another of 75%. Some sulphonated oils that are blended with raw fats are widely used in soaking rayon, but straight sulphonated animal and vegetable oils are usually favored. One good oil is a specially prepared tallow that has high softening and lubricating qualities and does not strip off.

There has been considerable experimenting with the use of various sizing agents in soaking hosiery yarns. Sizing agents are valuable when crepe twists are inserted (over 40 turns), to assist in controlling uniformity in the boil-off. They are of doubtful value in controlling stitch formation and probably of no value as coating agents. If enough size were put on the yarn to be of real protection against abrasion, the threads could not be twisted satisfactorily. Also, it is difficult to apply a size with sufficient uniformity to be more helpful than detrimental as regards formation of uniform stitches.

TWIST SETTING. Anyone who understands the theory of rayon twist setting realizes that the sizing agent here is valueless in the concentrations that can be used. The twist is set by the swelling and elongating of the rayon by means of water. The most uniformly effective setting is done in a conditioner or steam box having accurate wet and dry-bulb controls. Temperatures from 170 to 180°F., with a 5° spread between the wet and dry bulbs, are considered generally ideal. The closer the spread between the two bulbs, the more effective the setting. To digress slightly, most complaints of improper twist setting arise from radical changes in humidity and temperature, rather than from an inability to set the twist. Anything that rapidly or appreciably increases the moisture content of the yarn will tend to liven the twist.

Returning to soaking, silk throwsters probably will run into but little difficulty from the tint ingredient, since they have had considerable experience and are prone to use light shades. Here the main problem is fugitivity. Tints that have been perfectly satisfactory for silk may or may not be fugitive from rayon. All tints should be mill tested before used in quantity.

Silk throwsters should continue to follow their usual practice of employing light colors so that dirt can be detected. Dirt on rayon yarn is much more serious than on silk since it can scarcely be removed. This is especially true of dirty knots and of dirt which has been twisted into the yarn.

For soaking either silk or rayon, a soft, neutral water should be used. However, for rayon the pH does not have to be so accurately controlled. On the other hand, the bath temperature and soaking time should be strictly uniform. General practice is 30 min. at 130°F.

It is generally known, but should be mentioned, that forced drying is needed for soaked rayon and that the drying temperature should not exceed 170°F. Theoretically, rayon should be dried to just under 11% and should be allowed to condition to room temperature before being wound for twisting. In practice, if any moisture can be felt in the yarn after it has cooled, it is too wet to process.

Some few mills are faced with the problem of oiling rayon for use in hosiery, either with or without twisting. This is either because weaving yarns are being used or it is found, at times, that the rayon just does not have enough lubricant. In other cases oiling is necessary because the yarn needing further lubrication is supplied on cones that cannot be soaked. In such cases a U.S.P. white mineral oil is frequently used. Sometimes a very light oil of about 80 Saybolt viscosity is used and at other times oil as heavy as medicinal oil. Strangely, both seem to give reasonably satisfactory results, but preference generally is for the lighter oils.

Direct lubrication is carried out at times by dipping all or part of the rayon into the material, but a preferable method seems to be the addition of a predetermined quantity of oil to a given poundage of rayon. With either method the yarn should be allowed to remain in contact with the oil overnight or longer so that the lubricant will be distributed throughout the mass of yarn.

The foregoing suggestions apply only to viscose type rayon. Comparatively little acetate rayon is used in women's hosiery, and most silk throwsters and knitters have already developed techniques for handling cuprammonium.

Silk's Hosiery Role Ended Jan. 1

Mills generally used up silk yarns in process by first of year, survey shows

SILK PRACTICALLY PASSED OUT as a raw material in hosiery mills on Jan. 1 and consequently the need for substitute yarns from now on is much greater than that heretofore existing since the crisis started, according to a survey made by the National Association of Hosiery Manufacturers.

In a letter addressed, Dec. 19, to all manufacturers affected by the silk embargo, Earl Constantine, president of the association, states:

"Under date of Oct. 17, 1941, all manufacturers of silk hosiery were sent our 'Silk Substitution Questionnaire No. 1' intended to furnish us authoritative information as to the effect on the industry of the silk embargo, and the new requirements of the industry resulting therefrom.

"In keeping with our undertaking, we have now supplied all companies which co-operated in the mentioned survey with a detailed report and we have placed the information in the hands of the proper authorities at Washington.

"While a number of manufacturers failed to extend to us their cooperation in this important undertaking, the returns represent a majority of the capacity and are therefore representative and indicative.

"As was to be expected, the survey shows that the industry experienced a considerable shortage in cotton and rayon yarns during the month of August but that this condition improved considerably in September. We have reasons to believe that it has further improved from month to month.

"The report draws attention to the fact that the industry will generally use up by Jan. 1, 1942, such quantities of silk yarns as it may have had in process or on hand when the embargo went into effect, so that the need for substitute yarns after such date will be greater than that which preceded it.

"The estimated yearly requirements of the industry for rayon and cotton yarns closely support the estimates which were presented to OPM originally by the Special Silk Committee which this association had set up last May.

"The report reveals the difficulties which the industry has encountered in getting substitute yarns which are fully suitable for its product, as well as in getting the full quantities needed. It also shows that quite a few companies shut down temporarily when the silk embargo went into effect and that a few discontinued operations permanently. In addition, the facts presented show reductions in shifts and operating hours, as well as in the number of productive workers employed.

"As might have been expected, the replies indicate that while most plants were able to operate in October on a basis of 75% to 100% compared to their operations during the first six months of 1941, operations were on a lower basis generally in November and December.

"The industry generally complied promptly with the request of OPM that the manufacture of all-silk constructions be discontinued and that at least 50% of the Nylon yarns secured be converted into part-Nylon constructions. Some delays in compliance were explained by inability to secure the suitable substitute yarns to be used in part-silk and part-Nylon constructions."

Offerings of leading hosiery mills for spring early this month featured the 75 and 100 denier rayons, priced to retail around $1 per pair. Most have been specially treated to give greater elasticity and strength.

HOW MUCH RAYON does it take to replace 1 lb. of silk? This same letter from Mr. Constantine asks that question and states as follows:

"Discussion on this subject arose in various quarters last October. In our letter of Oct. 17, 1941, we referred to the matter, particularly to an estimate that it required only ¾ of 1 lb. of rayon at 100 denier to replace 1 lb. of raw silk. We advised the industry that we would not have any opinion on the subject until we had carried out tests analyzing various constructions. We referred the matter to our technical staff and have now received from them an extended report based on a study of 15 women's rayon constructions, together with a brief summary of their report, which follows:

"In changing over from silk to rayon in the manufacture of women's full-fashioned hosiery it is important to know how much rayon is required. A number of estimates have been made. A recent assumption was that the leg or boot section of a 3-thread silk stocking weighs 7 oz. per dozen pairs in the gum state and that a typical rayon full-fashioned stocking made with 100-denier yarn in the boot section requires 6 oz. per dozen pairs. This led to the conclusion that the 100-denier rayon used in the leg of this stocking is essentially equal in weight to the silk.

"A careful analysis of the present-day production of rayon hosiery has now been made. The stockings ranged from 39 to 45 gauge inclusive and the yarns used from 50 to 150 denier. Some stockings were all-rayon, others contained cotton reinforcement. A typical 100-denier boot ranges in weight from 9 to 13.1 oz. per dozen pairs or an average of 10.6 oz. per dozen pairs.

"Our analysis of silk hosiery indicated that the weight of the boot of a 3-thread stocking averages about 5 ounces per dozen pairs. Comparing the weight of 5 oz. per dozen pairs for the leg of a 3-thread silk stocking with an average weight of 10.6 oz. for the leg of a 100-denier rayon stocking, 1 lb. of raw silk is equivalent to 2.1 lb. of 100-denier rayon for the actual manufacture of the boot of these stockings.

"If the comparison is made on a clean-silk basis having a 25% boil-off, 1 pound of boiled-off silk is equivalent to 2.7 lb. of 100-denier rayon instead of the equivalent of 1 lb. of silk to ¾ of 1 lb. of rayon, as recently stated.

"The above figures are based on a section (boot) of the stocking. In order to give the complete picture, the amount of rayon required in the stocking should be based on the whole stocking rather than one section, such as the leg or boot. On the basis of the complete stocking the present analysis made from current production indicates that 1 lb. of (gum) silk in a 3-thread 45-gauge stocking is equivalent to 1.6 lb. of rayon in a 100-denier 42-gauge all-rayon stocking; and in a rayon stocking with cotton reinforcements the analysis indicates that 1 lb. of (gum) silk is equivalent to 1.4 lb. of rayon."

Hand-Weaving as Fashion Source

Still largely a hobby, it is gaining industry recognition by success of leaders

By WILLIAM B. DALL
Managing Editor, TEXTILE WORLD

HAND-WEAVING, just a hobby for perhaps 80% of its devotees in this country, is showing excellent commercial possibilities to those who are styling and producing in harmony with the market. It has been said that there are now more hand-looms in the United States than there were in the 13 original States at the time of the Revolution in 1776, though 160 years ago hand-weaving was a home industry and almost the sole source of the fabrics then in use.

Handicraft authorities are loath to estimate on the present number of hand looms in this country. By checking at various sources, we have come to the conclusion that there must be at least 50,000 looms of 24-in. or wider in active use, together with an equal or greater number of narrower looms.

Whereas 15 or 20 years ago, the few hand-weavers working for the market were supplying merely a small local trade, each in his own vicinity, there are now at least eight or ten concerns which have achieved national distribution—one reaching the high mark of the volume producer recently by having his fabric included in a woman's coat item in the Sears-Roebuck catalog!

In our issue of last month, a contributor traced the growth from its start in the 1920's of organized hand-weaving in the Santa Fe area. Firms now active there include the McCrossen Hand-Woven Textiles, Burro Weavers, and Santa Fe Hand-Woven Fabrics. These concerns are evolving through neckties and novelties to tweeds and other apparel fabrics.

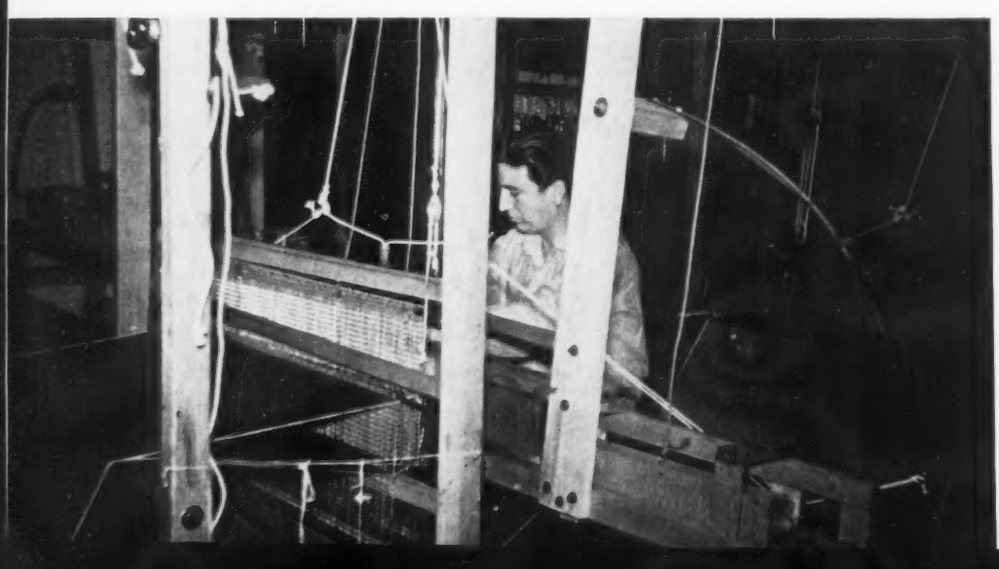
The Churchill Weavers, Berea, Ky., have grown from a college class to an institution operating over 70 looms and producing an unusually varied line in wool and other fibers, including apparel fabrics, blankets, scarfs, neckties, napkins, tablecloths, etc.

In New England, Glenbarr Fabrics, Lowell, Mass., organized only a few years ago, is turning out a well-styled line of woolens on 13 hand-looms. The line is sold by E. Y. Stroud, of New York, well known through his connection with the importation of Harris tweeds into this country. Glenbarr makes shetlands, tweeds and cassimeres.

Roger Millen, once a photographer in Hackettstown, N. J., who took up weaving as a hobby, now operates Millen Tweeds, Inc., at Bedford, Pa., with three weavers. Though started only a little more than two years ago, Millen tweeds are now handled by custom tailors from coast to coast.

These are merely examples and there are many more. Such organizations usually develop from the activity of one enthusiast, who in turn has often picked up hand-weaving as a relaxation or to fit him for a career in welfare work. There are numerous centers of encouragement for handweavers, including handicraft schools and institutes which dot the country from coast to coast, and manufacturers of equipment, who also give instruction. Handweaving is widely used in occupational-therapy.

One of the wider hand-looms with fly shuttle as used by McCrossen Hand-Woven Textiles



WITH THIS BROAD BASE of trained and equipped personnel, it has seemed to some observers that the high-styled specialties which formerly came from Europe, notably France, might quite well be supplied from a domestic source so far almost untapped. These specialties must be available only in small yardages, and the look of hand-work about them is often an added virtue. Once these originals gain acceptance in the field of high style, they give leadership to the trend affecting machine-production items. Volume production alone cannot hope to supply these top-style novelties because of manufacturers' reluctance to produce small yardages of experimental fabrics. The couturiers of Paris had close cooperation from French hand-weavers, and, through elevating fabric production to the level of a fine art, brought international style authority to France. There seems an opportunity for American hand-weavers to seize the high spots in the style market, and to act as an inspiration-source for the textile industry as a whole. There is, however, some difference of opinion among hand-weavers on this.

D. C. Churchill, of the Churchill Weavers, says, "With the cooperation of wool merchants and better spinners here, such establishments as ours for one will be in position to cooperate with the stylists to begin to enter that field. To capture it, is a long, hard pull. Whether the hand-weaver set-up in this country will ever manage to duplicate in even small degree the skill and equipment of the hand-weavers of France is a matter of study."

Mrs. Florence Ives Gookin, weaver, of Ogunquit, Me., regards the situation with some optimism. "If the hand-weavers of American can be shaken into the right vision of hand weaving," she says," . . . to know their yarns from the fleece out, to design from the need standpoint, and to make original, smart and wearable fabrics, they can greatly help American leadership in design. The clothing designers want and need such materials. I have woven some fabrics for Mainbocher and Henri Bendel and am now working on some new ideas for Mainbocher."

M. Gallinger, manager of Gallinger Crafts, Hartland, Mich., which builds

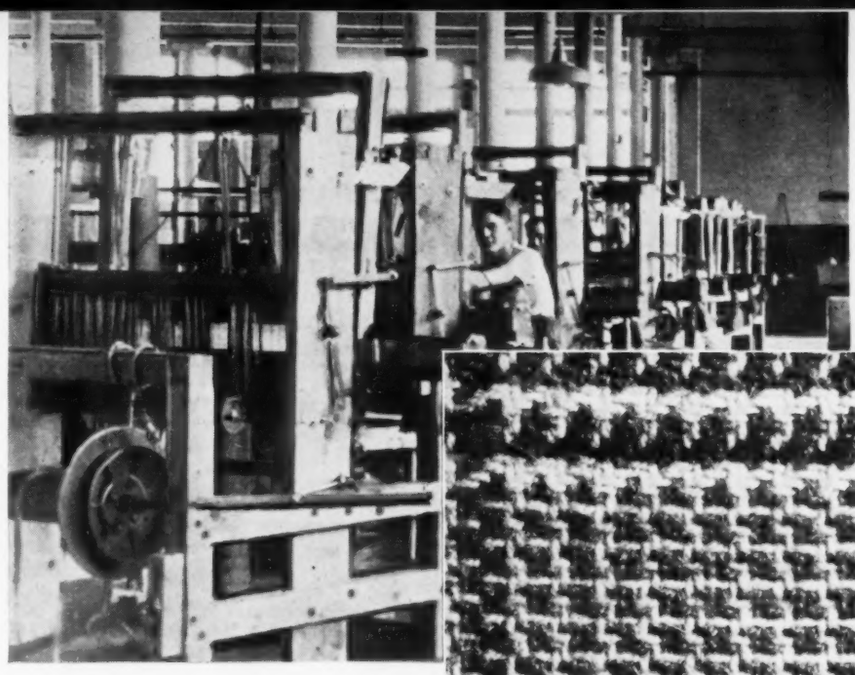
and distributes equipment and yarns, gives instructions, issues publications, and weaves household fabrics, sees hand-weavers as the natural nucleus for creation of artistically inspired and exclusive fabrics. Mr. Gallinger's own experience in being the first to develop use of gold and silver cellophane threads in weaving about five years ago impresses him with hand-weavers' opportunities for origination.

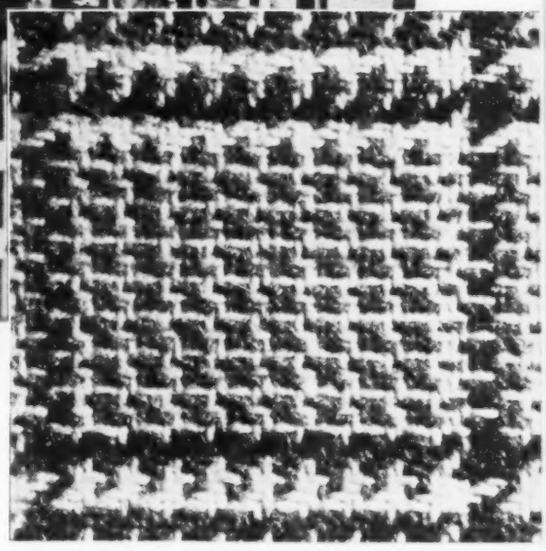
Mrs. Mary T. Atwater, of Basin, Mont., president of the Shuttlecraft Guild, who has written manuals on weaving and conducted classes from New York to California and in many parts of Canada, finds increasing interest in hand-weaving both in the commercial and artistic sides, but, she adds, "the commercial aspects of the craft are not really very important—the main product is the health and pleasure of the participant. Some of the things we do quite easily on a hand-loom are extremely complicated in mechanical weaving, and other things that are quite simple with machinery are very slow and tiresome by hand. I don't see much value in trying to combine the two crafts."

Edward T. Hall, founder and director of the Universal School of Handicrafts, New York, finds a sharp upturn in interest. He says "Inquiries from those who wish to do hand-weaving as a business are 300% ahead of six months ago. There is a similar increase in demand for looms weaving fabrics from 48 to 56 inches, as well as for looms equipped with fly shuttles."

There is a field for the hand weaver in designing directly for mills, submitting a fabric sample along with the fabric layout, but this function is merely an extension of that of the designer and does not furnish the fashion leadership of smart fabrics in the hands of an exclusive dressmaker.

The men's tailoring trade has use for exclusiveness on a scale perhaps second only to women's wear. Men who pay top prices for clothing don't want to meet their suit-fabric on someone else's back. Many men who can't pay for that privilege, still favor a fabric which has that "hand-loomed" look. The average man-in-the-street expects his hand-woven suiting to come from abroad. It *can* come from rapidly growing sources in the United States. At least one manufacturing clothier (M. Wile & Co.) has featured American hand-woven fabrics and sent a small loom with a weaver around the country for promotional window displays in retail stores. Goodall Decorative Fabrics Division of Goodall Worsted Co. is turning out hand-woven type fabrics via machine method by running one loom to a weaver and by careful designing.





(Above) A battery of hand-looms run by Glenbarr Fabrics

(Right) Fabric sample from Glenbarr line

THE YARNS USED by hand weavers are in most cases machine spun. Cliveden Yarn Co. of Philadelphia, among others, offers this field a wide range of yarns in cotton, all-wool, wool-rayon mixtures, etc. Such yarns come in a wide color range. Gallinger Crafts, of Hartland, Mich., list cotton and linen yarns in various counts and plies. The greater part of hand-woven fabrics are made from colored yarns. The weaver usually does his own warping and bobbin winding.

Individual weavers have limited and crude finishing methods and dyeing is rarely practiced. If the fabric is wool, it is usually given a scour, perhaps a little fulling, and is dried on a simple frame or tenter. Some yarns now on the market are mothproofed, but generally speaking the addition of various proofing finishes are not applied to hand-woven goods.

Universal School of Handicrafts

Looking over the hand-weaver's shoulder

Omitting table-looms and other small weaving devices, standard hand-looms are available from $35 to over $150. A 32-in., 4-harness loom is priced by one maker at $45; a 42-in. 8-harness loom is priced in another quarter at $140. Some looms require the passage of shuttle through shed by hand; others have the fly shuttle controlled by a cord pulled from side to side by the operator; still another make has picker sticks controlled by the forward and backward motion of the lay.

Production on a hand-loom varies greatly with the fabric width, the picks per inch, and the ability of the weaver. One maker of tweeds sets one yard of 36-in. goods per hour as a sort of bogey. One of the better known firms got an average of 2,400 yd. off each of its 45-inch looms in 1939 on goods finished at 38-inch width, which figures close to 8 yd. per day on the likely number of working days.

The hand-loom craft is, of course, of great antiquity and universally practiced in all the countries of the world. The craft in eastern Canada runs as far north as Labrador and is said to be well-organized and guided. In Sweden, it has reached heights of artistry and skill through governmental encouragement. In India there are said to be over 1,500,000 hand-looms and these consume about 25% of the yarn product of Indian spinning mills. In the United States a transition from a hobby to an industry may be under way.

Corrosion-Resisting Materials

Recent survey should aid textile mills under present and post-war conditions

By WINN W. CHASE
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CORROSION OF EQUIPMENT employed in various wet-processing operations is an important problem which is common to all branches of the bleaching, dyeing and finishing industry. Closely allied to this problem of corrosion is that of spoilage of goods in process due to use of equipment constructed of unsuitable materials. In the decade preceding the present emergency the textile industry had become acutely conscious of these problems and was making more and more extensive use of corrosion-resisting metals, alloys, and other materials. Shortly before the Government instituted the priorities system, the writer conducted a survey for the purpose of determining what are considered to be the most suitable materials for use in constructing some 50 different types of equipment employed in processing cotton, wool, rayon, silk, hosiery, and knitted fabrics. It is believed that the results of this study, as outlined below, should be of interest to everyone who is concerned in any way with the purchase and installation of bleaching, dyeing, printing, and finishing equipment. Because of the present scarcity of many of the corrosion-resisting materials favored for construction of wet-processing equipment, the conclusions which can be drawn directly from this survey have been supplemented by some further suggestions as to measures which may prove helpful during the emergency.

In conducting the survey, the writer first submitted to a selected group of textile chemists and engineers a questionnaire asking for information as to the materials which they had found most suitable for various types of equipment. The study was restricted to the types of machines most commonly employed and did not include tanks, pipes, fittings, or other auxiliary equipment. The information supplied by these mill men was supplemented by data furnished by a number of machinery manufacturers and by companies producing various materials used in the construction of the types of equipment included in the survey. At this time the writer wishes to express his appreciation to all those who through their generous assistance have made this report possible.

Results of the questionnaires are given in Tables I to V. Study of these tables will show the percentage of total replies favoring a particular material for each type of equipment. For example, as can be seen from Table I, of the total number of replies received as to the material found most suitable for construction of desizing machines, 55% specified wood, and 45% specified iron. As the number of questionnaires returned was small in comparison with the total number of plants in each branch of the industry surveyed, the percentages cannot be considered as absolute, but merely as indicative. Thus, Table V shows that of the total number of replies received as to the preferred material for hosiery dyeing machines, 55% specified stainless steel, and 45% specified Monel metal. However, it is known that Monel metal is more widely employed than any other material in construction of hosiery dyeing machines; and a large majority of those who replied to another questionnaire sent out by a different investigator stated that Monel metal is the accepted standard of construction for rotary hosiery dyeing machines.

There are several important points which were brought to light by this survey.

MATERIALS PREFERRED. The most striking fact shown by the tables is that, judging from the replies to the questionnaires, the textile industry is using only a relatively few types of corrosion-resisting materials, with stainless steels and/or Monel metal being preferred by a majority of mill men for many types of equipment. The very high percentage of replies in each of the tables indicating a preference for stainless steels is a reflection of the way in which these materials rapidly gained in favor

Table I — COTTON FINISHING MACHINERY
(Percentage of preferences for materials listed)

	Monel Metal	Nickel-Clad Steel	Stainless Steel Type 304	Stainless Steel Type 316	Iron	Copper	Brass	Lead Lined	Wood	Concrete
Desizing Machines	...	..	...	...	45	..	..	..	55	...
Kiers — Alkali	...	..	30	...	70	..	..	..	..	...
Kiers — Peroxide	10	10	30	...	50	..	..	..	..	...
Bleaching Machines — Chemic	...	..	12½	25	12½	..	..	..	25	25
Bleaching Machines — Peroxide	10	10	45	...	25	..	..	..	10	...
Mercerizing Machines	...	..	30	...	70	..	..	..	..	...
Neutralizing Machines	...	..	15	15	...	..	..	15	55	...
Dyeing Machines	10	6	47	10	10	..	..	..	17	...
Agers — Acid	...	..	25	25	...	..	..	..	50	...
Agers — Aniline Black	...	..	16⅔	16⅔	66⅔	..	..	..	..	...
Agers — Vat	...	...	...	30	70	..	..	..	..	...
Open Soapers	...	..	20	...	80	..	..	..	20	...
Dry Cans	12½	..	37½	...	...	50	..	..	..	...
Starch Mangles	15	..	45	...	...	..	10	..	30	...

in all branches of the textile processing industry since their introduction about ten or twelve years ago. It is known that a number of corrosion-resisting materials which were not mentioned in any of the replies have some textile applications. Such materials include Durion, chemical stoneware, aluminum, chromium-plated metals, and various plastics. Again, there are several types of protective coatings which can be applied to wood, iron, etc., to render them resistant to the action of various chemicals; some of these, although not noted in the replies, are proving useful.

The implication is that materials not listed are less extensively employed than any of those noted in the replies; however, it is quite possible that a more complete survey would show this is not true in all instances. It should be noted, also, that in the replies received no differentiation was made between solid stainless steels and stainless-steel-clad steels, although the latter are being employed in some types of textile equipment—primarily because they are lower in cost than the corresponding solid metals. Further, it should be remembered that lack of mention of a material for a specific purpose does not necessarily mean it is not suitable for that purpose. For example, it is known that Monel metal has been employed satisfactorily in alkali kiers, mercerizing machines, neutralizing machines, acid agers, aniline black agers, vat agers, open soapers, and silicating machines; likewise, Iconel has applications in wool finishing equipment other than the one indicated in Table II.

Table II — WOOL FINISHING MACHINERY

(*Percentage of preferences for materials listed*)

	Monel Metal	Inconel	Stainless Steel Type 304	Stainless Steel Type 316	Iron	Brass	Lead Lined	Wood	Glass Lined	Haveg	Rubber
Washers — Raw Stock	10	..	30	10	30	..	10	10	..	..	...
Dyeing Machines — Raw Stock	7	..	30	49	7	..	..	7	..	..	...
Extractors — Raw Stock	10	..	40	20	10	20	..	..	..	..	...
Carbonizing Equipment Raw Stock	10	..	..	50	..	..	20	10	..	10	...
Dyeing Machines — Top	..	..	33⅓	66⅔	..	..	..	..	..	..	...
Dyeing Machines — Yarn	8⅓	..	50	16⅔	8⅓	..	..	16⅔	..	..	...
Crabbing Machines	..	..	45	..	..	..	..	55	..	..	...
Cloth Washers	7	..	29	7	7	..	..	50	..	..	...
Piece Carbonizers — Acid Tank	7	..	7	12	..	..	30	25	..	7	12
Piece Carbonizers — Extractor	11	..	..	22	..	..	22	11	..	..	34
Piece Carbonizers — Neutralizing Tank	10	..	10	10	..	..	10	60	..	..	...
Soaping Machines	..	..	20	..	10	..	..	70	..	..	...
Fulling Machines	8	..	30	8	8	..	..	46	..	..	...
Dye Kettles	7	4	25	38	..	..	..	18	4	4	...

Table III — RAYON AND SILK SOAKING, CONDITIONING, AND FINISHING MACHINERY

(*Percentage of preferences for materials listed*)

	Monel Metal	Stainless Steel Type 304	Stainless Steel Type 316	Iron	Copper	Brass	Wood	Rubber
Soaking Machines	16⅔	66⅔	...	...	...	...	16⅔	....
Conditioning Machines — Yarns	20	40	...	20	20	...	...	....
Degumming Machines — Silk	16⅔	33⅓	...	33⅓	...	...	16⅔	....
Boil-Off Machines — Rayon	15	30	...	40	...	...	15	....
Creping Machines — Rayon	16⅔	33⅓	...	50	...	...	...	....
Dyeing Machines	15	65	15	5	...	...	...	....
Extractors	15	55	...	15	15	...	...	....
Dry Cans	12½	62½	...	12½	12½	...	...	....
Tin Weighting Machines	...	...	75	...	...	...	...	25
Phosphating Machines	...	...	33⅓	66⅔	...	...	...	....
Silicating Machines	...	33⅓	...	66⅔	...	...	...	....
Quetsches	16⅔	66⅔	...	16⅔	...	...	...	....
Agers — Print Goods	...	...	40	40	20	...	...	....
Washers — Print Goods	...	50	...	37½	...	12½	...	....

NO AGREEMENT. A second striking fact shown by the table is that there is no unanimous agreement as to the most suitable material for a single one of the 50-odd types of equipment listed. In the case of cotton dyeing machines, for instance, 47% of the replies favored Type 304 stainless steel; 10% Type 316 stainless steel; 17% favored wood; 10% Monel metal; 10% iron; and 6% nickel-clad steel. Again, it will be noted that whereas for some machines a majority of the replies indicated a preference for stainless steel, there was no agreement as to the particular type of stainless steel which is most suitable. Thus, for dye kettles for wool fabrics, 25% of the replies specified Type 304 stainless steel and 38% Type 316 stainless steel. Note too, that not a single reply advocated Type 304 stainless steel for piece dye kettles for wool; although 25% of the replies favored that type of stainless steel for dyeing machines for wool yarn.

A third fact shown by the tables is

that many mill men are not fully aware of the advantages of corrosion-resisting materials, and, in some instances, are using materials which are not at all suitable for the purposes to which they are being put. An example of this can be seen in Table I, where 12½% of the replies as to bleaching machines using chemic specified iron — which definitely is not the most suitable material. Another example can be noted in Table II, where 10% of the replies in reference to washers for wool raw stock specified wood and 10% specified lead-lined equipment. Study of the tables will reveal other similar examples. On the other hand, several of the replies showed that some mill men are striving zealously to solve the corrosion problem and have, through experiments, uncovered information which is not yet widely known throughout the industry. For instance, one man wrote that experiments he has carried out with tellurium lead indicate it is suitable for use with hot sulphuric and nitrous acids.

FACTORS INFLUENCING CHOICE. Many of the replies stressed the fact that choice of a given type of corrosion-resisting material is governed largely by the uses to which it is to be put. Thus, a dye jig suitable for dyeing cotton fabrics with direct colors may not be suitable for dyeing with sulphur colors. To insure the greatest possible versatility, most mill men prefer that certain types of equipment—particularly dyeing machines—be constructed of materials having corrosion resistance to a wide range of chemicals. On the other hand, for some single-purpose types of equipment, such as mercerizing machines, open soapers for printed fabrics, etc., the majority of mill men feel that although stainless steel, for example, would be satisfactory, due to its relatively high cost as compared to iron, its use cannot be justified.

Further, a great many of the replies emphasized that textile men are interested not only in the corrosion-resisting properties of the materials *per se*, but also in the effect of the materials on the solutions with which they come in contact and on the textiles being processed. Factors which must be taken into consideration include saddening of colors during dyeing, decomposition of peroxide bleaching solutions, contamination with copper of textiles to be rubberized, soiling or staining of textiles during processing due to equipment which cannot easily be kept clean, etc.

Several of the mill men replying to the questionnaires commented on the scarcity of authoritative information on the problem of corrosion of textile equipment and expressed their opinion that the whole subject should be thoroughly investigated, using in the study bleaching, dyeing, and other solutions of the same composition, concentration, and temperature as are actually employed in textile mills. Data are available on the resistance to corrosion of various materials by single chemicals. Also, producers of nickel alloys and of stainless steels, through experiments and experience, have developed and published a considerable amount of information relative to the suitability of those materials in a number of textile operations. There is need, however, for similar information on other types of corrosion-resisting materials and for more complete data on the nickel alloys and stainless steels.

Table IV — HOSIERY DYEING MACHINERY
(Percentage of preferences for materials listed)

	Monel Metal	Stainless Steel Type 304	Stainless Steel Type 316	Tinned Copper	Lead Lined	Glass Lined
Bleaching Machines — Chemic	37½	12½	37½	...	...	12½
Bleaching Machines — Peroxide	50	25	...	...	12½	12½
Dyeing Machines	45	28	27	...	...	...
Extractors	50	25	12½	12½	...	...

VALUE OF THE SURVEY. Most types of corrosion-resisting materials favored by textile men are under priorities control, and their use at present is restricted largely to construction of equipment needed for processing textiles required by the Government for military purposes. It is possible, of course, to obtain priority ratings for equipment needed by mills to enable them to complete contracts awarded by the Army or Navy. The results of this survey should be of immediate value, therefore, in setting up specifications for materials to be used in construction of new bleaching, dyeing, and finishing equipment which is essential to the victory program.

A second way in which the survey can be of assistance is as a guide to the use of substitute materials for those which at present are difficult to obtain. In some instances, for example, study of the tables and the text will suggest alternative materials which may be used in place of those now under priority control.

As a result of the victory program, many companies are expanding their capacity for producing corrosion-resisting materials. When, sooner or later, the time comes that there is no longer a demand for these materials for military purposes, they will be available to the textile industry in larger quantities than ever before. There is ample evidence that use of the correct materials in construction of textile machinery lowers maintenance costs, increases life of equipment, reduces lost time for cleaning and repairing of machines, prevents decomposition of processing solutions, and lessens damage to goods in process due to off colors, stains, or product contamination.

On the other hand, this survey has made it apparent that there is a real need for a thorough investigation of the corrosion problem involved in processing of textile of all types to determine what materials are most suitable for use for specific purposes. Properly carried out, such research would reveal what particular materials can be used most effectively and most economically in combating corrosion; it would be of immeasurable value to the textile industry. This is the ideal time to start such a research.

Table V — KNITTED FABRICS DYEING MACHINERY
(Percentage of preferences for materials listed)

	Monel Metal	Stainless Steel Type 304	Stainless Steel Type 316	Glass Lined
Bleaching Machines — Chemic	16⅔	16⅔	50	16⅔
Bleaching Machines — Peroxide	16⅔	33⅓	33⅓	16⅔
Dyeing Machines	16⅔	50	33⅓	...
Fulling Machines	25	25	50	...
Extractors	40	20	40	...

Why Warp Ends Break in Weaving

Variation in stretch or elongation of yarns is reasoned to be principal cause

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SATISFACTORY WEAVING of first-quality cloth requires that a certain tension, even though small, must be exerted during the weaving operation on the individual ends which make up the warp sheet. The work of Owen at Shirley Institute showed that in plain weaving of 28s yarn, the tension on single warp ends varied from 4.5 to 14 grams over each successive weaving cycle—a cycle consisted in the weaving of two picks. It should be noted that the maximum tension of 14 grams thus exerted is considerably less than 1% of the breaking strength of normal 28s yarn.

To break a yarn, it must be subjected to a load or pull greater than its strength. If it requires a maximum tension of only 14 grams for good weaving, why should the tension ever be greater than that? If this were the maximum tension ever exerted on a single warp yarn, there should be no yarn breaks. Nevertheless, a great many yarn breaks do occur in weaving. In order to arrive at a logical reason for yarn breaks, it is necessary first to consider certain fundamentals.

Let us assume that we have a loom beam made up of ends having practically no stretch—similar perhaps to a copper wire—threaded through the loom and wound on the cloth roll. Assume further that the loom is not operated to make cloth, that the cloth roll is turned by hand, and that the let-off motion exerts a "drag load" on the loom beam. Each time the cloth roll revolves, a given length of yarn is wound from the loom beam. This length is practically the same, regardless of the tension exerted by the let-off motion. In other words, copper wire does not stretch or become elongated under ordinary loads. Now assume that a similar loom beam is made up of yarns having a high stretch—say, a mercerized yarn with a stretch of 20%—and that the yarn has been laid onto the loom beam under practically no tension, as is done in general practice. Each time the loom beam revolves, a length is wound onto the cloth roll which may be greater by 20% than the circumference of the loom beam because the yarn between the beam and roll is under tension and stretches. Thus, under loom operating conditions in which the loom beam is under a load exerted by the let-off motion, the length of the yarn wound on the cloth beam bears a direct relation to the stretch or elongation of the yarn.

Finally, let us assume that we have a loom beam made of dissimilar ends, half having no stretch and the other half having a stretch of 20%. Now repeat the above winding operation. Assume, too, that equal tension is initially placed on all the ends as the cloth roll is revolved. As long as tension is being exerted on the ends having stretch, these ends, as they lie between the loom beam and the cloth roll, will increase in length. As their lengths increase, it follows that the tension on them will decrease, until finally, after a sufficient number of revolutions of the loom beam, they will, theoretically and practically, be under no tension or load. The tension or load required to pull the loom beam has been shifted to the ends having no stretch.

From this discussion, it is quite obvious that if a loom beam is composed of ends which vary considerably in their stretch or elongation properties, the tendency will be for the load to be carried by those ends having the least stretch. If these stretch variations are sufficiently great, excessive tension may be placed on a single end, or small number of ends, with the least stretch, with the result that breaks may occur. Remember that these differences may be cumulative and increase progressively as the warp is consumed.

TO PREVENT ENDS FROM BREAKING by increasing the breaking strength when such shifting of tension occurs is a next-to-impossible task. In order to accomplish this, one end, or several ends, would have to be sufficiently strong to carry the entire load required to operate the let-off motion. Incidentally, it must not be forgotten that yarns may be severely damaged by loads considerably less than those required to break them. If, in the previously described illustrations, the loom had been actually operated and cloth produced, the same tendency for the tension to shift from the ends of greater to those of lesser stretch would have been present. However, it is possible that the interlacing of the filling may have modified the results so that somewhat greater elongation differences in the ends would have been needed to obtain given tension differences.

It appears then that yarn breaks during weaving are caused, in a large measure, by exposing the yarn to excessive tension or to loads greater than their breaking strength. Excessive tensions may be brought about by unequal elongation properties of the yarn. If the elongation properties of the ends composing the warp sheet are not uniform, the load required to turn the loom beam will shift to the end, or ends, having the least stretch, and breaks will be numerous. If, however, the elongation properties are uniform, within practical limits, the tension on each individual end will remain the same as that initially exerted at the beginning of the weaving operation, and breaks will be at a minimum. It follows that in any scheme for evaluating or judging sized yarns, the actual tensile strength of the yarns seems to play only a minor part. Rather, a major consideration may be the elongation properties of those yarns or, more specifically, the uniformity of the elongation and set determinations of those yarns, made under comparatively small loads.

Abstract of a paper presented at a meeting of the Alabama Textile Executive Association.

Weave-Room Control

Loom control sheet and loom inspection report are important parts of system

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A LOOMFIXERS' CONTROL SHEET, covering defective goods, loom efficiency and repairs, was described and illustrated in the December, 1941, issue of TEXTILE WORLD. Two other forms which are employed in the system of weave-room control advocated by the author or discussed in the present article.

First of these is the loom control sheet shown in Fig. 2. This form provides a means for the control over the performance of the individual loom. It will be noted that there are spaces for designating the period under consideration, the defects as analyzed from a copy of the examiner's reports, and the repair costs as evidenced by the stock requisitions and fixers' repair-parts tickets.

The repair requisition and copies of the examiners' reports are sorted daily in order of loom number. At the close of the four-week or monthly period such results are summarized and posted to the loom control sheet.

The maintenance of this report gives certain definite controls to management.

1. It gives a comparison of defects most frequently occurring on the loom with the type of repairs most frequently required.

2. It indicates whether a loom is giving a sub-normal quality performance, thereby denoting the need for basic change in the equipment or possibly the design of the product.

3. An above-normal repair activity may indicate the lack of desirability of the existing equipment or correction in the fixing measures employed.

(In mills employing automatic tabulating methods, such controls as outlined in this article can be readily fitted into the needs of such equipment.)

Quite a number of mills have centralized their mill supplies store rooms to such an extent that loomfixers spend more of their time going after minor parts than is represented by the value of such parts. Partially localized decentralization of minor, but frequently used, repairs parts, such as pickers, picker sticks, shuttles, check straps, etc., will release valuable fixers' loom-attention time.

In the latter connection, studies made by the author and his associates indicate, depending upon the mill layout, that it costs a company from 6 to 15c. of fixers' time lost for each requisition which he must have filled at a central store room. If requisitions for supplies by fixers average only 50c. to $2, the company is paying an extremely high rate for protection against theft or loss.

Another way in which loomfixers' time can be saved is through provision of the proper gages for checking such alignments as lay-center; lay-height; the battery—for lining, height and end. Such gages are standard loom manufacturers' products; many other gages not on the market can be improvised by the individual mill.

Also advisable is a methods analysis of fixers' activities through personal observation; where possible, such analysis is improved by detailed time-study recordings.

Fig. 2. Loom control sheet

LOOM CONTROL SHEET — Loom No. ____

Period																
Quality																
Slay - Pick																
Theoretical Picks																
Actual Picks																
% Efficiency																
DEFECT - TYPE	NO	YDS	NO	YDS	NO	YDS	NO	YDS		NO	YDS	NO	YDS	NO	YDS	NO	YDS
Mispick									Runs								
Thin									Harness Skips								
Jerked-in Filling									Bad Selvage								
Kinky Filling									Misdraw								
Mixed Filling									Drawback								
Reeed Filling									Breakout								
Crackled Filling									Floats								
Looped Filling									Miscellaneous								
ACTUAL																	
STANDARD																	
GAIN OR LOSS																	
REPAIR COSTS	NO	AMT	NO	AMT	NO	AMT	NO	AMT		NO	AMT	NO	AMT	NO	AMT	NO	AMT
Picker Sticks - R									Drive								
Picker Sticks - L									Let-Off								
Pickers									Take-Up and Wind-Up								
Check Straps									Lining								
Shuttles									Harness Motion								
Sundry Pick Motion + Shuttle									Battery								
Pick Motion									Filling Stop Motion								
Stop Motion									Transferrer								
Temples and Parts									Boxing								
Frame									Warp Stop Motion								
Cam and Crankshafts									Whip Rolls								
Lays									General								
Brakes																	
TOTAL REPAIRS																	
Overhaul																	
TOTAL LOOM																	

LOOM REPAIRS. Two major methods for coping with loom repairs have been observed in cotton-mill weave-rooms: The first method is to wait until something breaks before the fixer makes repairs. The second method is to completely dismantle all looms periodically and give all parts a thorough examination.

The first method, which is predominant, is costly. When one waits for something to break, usually several related loom parts are affected. The author's calculations indicate a higher-than-average routine repair cost in mills following this practice. On the other hand, completely dismantling each and every loom, in addition to the costliness of the dismantling and reassembling, results in protracted periods of loom down time and increases the amount of stand-by capacity which must be provided.

A third method, which is advocated by the writer is the periodical inspection of looms and repair or replacement of such parts as are worn or damaged. This periodic check up will result in a reduction of seconds and a lowering of repair costs. A Loom Inspection Report suitable for use with this method is shown in Fig. 3. This applies to Draper and Northrup Looms. (A loom inspection report which applies to C&K looms and the routine for its operation was described fully in an article, "The Loomfixer's Job," printed in the January, 1935, issue of TEXTILE WORLD.

THE LOOM INSPECTION routine outlined will lose most of its effectiveness unless the following points are observed: (1) The individual or individuals making the loom inspection should not be a direct part of the weave-room organization. He or they should preferably report either to the head of the machine shop or to the maintenance engineer,

LOOM INSPECTION REPORT

Loom No. ____ Month of ____ 19__

Fixer ____ Inspected by ____

KEY | A—Good Condition; B—Worn but Serviceable | C—Badly Worn or Broken; FC—Fixer's Credits, Basis for Incentive Bonus

		A	B	C	FC
(1) Frame					
Lay Guides	M .5				
Lay Beams	A -				
Rock Girts	A -				
Arch and Arch Setting	M -				
Middle Girts	A -				
Top Girts	A -				
Center Bamoon and Extension	A -				
Breast Beam Dowel Pins	Q -				
Front Girts	A -				
Total	.5				
(2) Cam and Crank Shafts					
Crank Shaft Boxes and Bolts	M .5				
Set Screws in Crank Shaft Box	M .5				
Crank Shaft Gear Bolts	Q -				
Clutch Friction Gear Bolts	Q -				
Cam Shafts Boxes and Bolts	Q -				
Cam Shaft End Play	M .5				
Crank Shaft Center Box	Q -				
Cam and Crank Shaft Gears	Q -				
Set Screws in Gears	M .5				
Cams and Harn. Cam Chg. Gears	Q -				
Drive Shaft Inside Bearings	Q -				
Drive Shaft Inside Bearing Dowel	Q -				
Hand Wheel	Q -				
Brake Wheel	Q -				
Total	.5				
Lays					
Lay Sword	M 1.0				
Lay Beams Level	A -				
Lay Center Gauge	A -				
Lay Height Gauge	A -				
Lay Ends	M 1.0				
Rocker Shaft	M 1.0				
Rocker Shaft Boxes	Q -				
Rocker Shaft Center Bearing	Q -				
Rocker Shaft Box Dowels	M .5				
Lay Guides	M .5				
Temple Leathers	M 1.0				
Total	2.5				
(4) Take Up and Wind Up					
Worm Shaft	M .5				
Worm Shaft Bracket	M .5				
Take Up Shaft Driving Gears	M .5				
Take Up Rolls	M .5				
Take Up Roll Setting	M 1.0				
Take Up Roll Gears	M .5				
Gear Covers and Worm Guards	Q -				
Foot Treadles	M .5				
Take Up Ratchet and Pawls	M .5				
Take Up Pawl Conn. Arms	M -				
Take Up Guide Rods	A -				
Breast Beam Rolls	M .5				
Spreader Bar	M .5				
Wind Up and Spring Sh. Parts	M .5				
Cloth Roll Stand and Gears	M .5				
Cloth Roll and Parts	Q -				
Breast Beam Board	M .5				
Cloth Holder Arms and Bases	M .5				
Total	3.5				

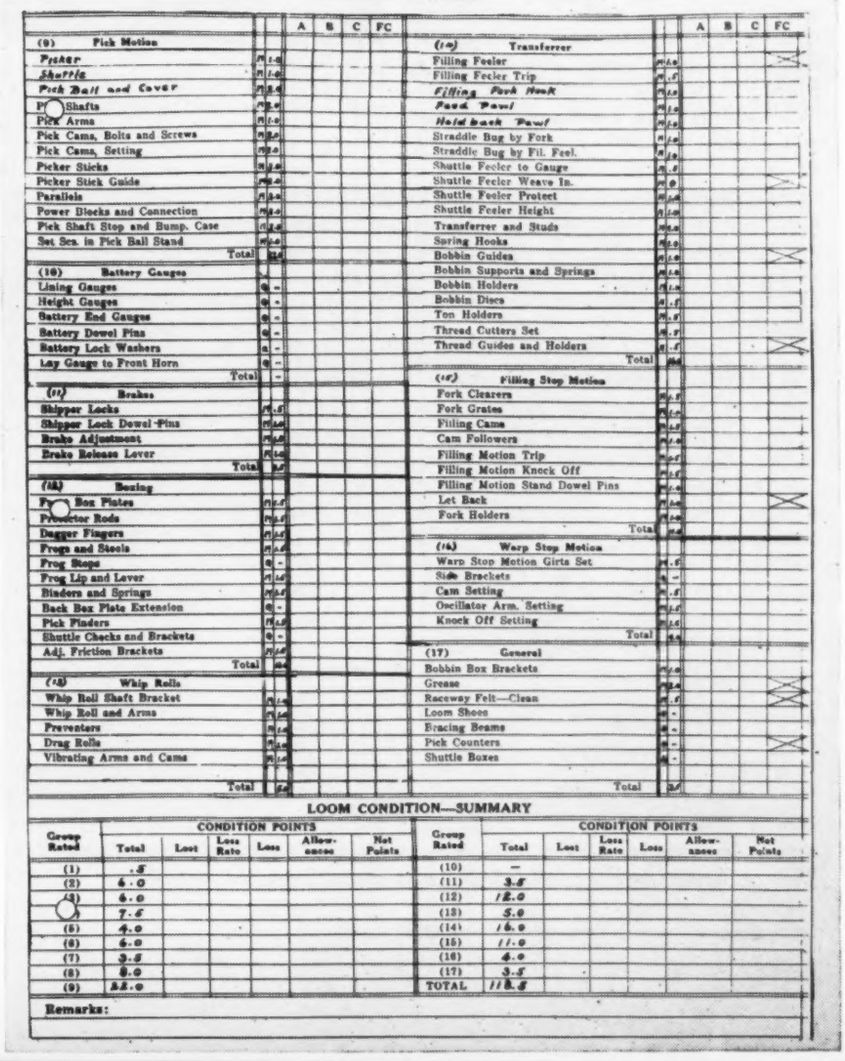
		A	B	C	FC
(5) Drive					
Head Gear	M 1.0				
Clutch Friction Gear	Q -				
Driving Disc and Cones	Q -				
Clutch Finger Adjustments	A -				
Outside Bearing and Support	A -				
Motor Stand	Q -				
Driving Gear Guards	Q -				
Disc Friction Gear Guards	Q -				
Shipper Handle	A -				
Back Shipper	Q -				
Hand Shipper	Q -				
Shipper Sleeve Arms	M .5				
Safety Lock	M .5				
Out. Brg. Sup. Brace Dowels	M 1.0				
Total	4.0				
(6) Let Off					
Yarn Beam Bearings and Hooks	M .5				
Let Off Bearing	M .5				
Let Off Shaft	M .5				
Let Off Gear	M .5				
Let Off Pinion to Gauge	A -				
Control Lever	M .5				
Control Lever Spring	M .5				
Beam Leaver	M .5				
Ratchet and Pawls	M .5				
Connection to Sword	M .5				
Pinion Shaft Handle	M .5				
Yarn Beam Bearing Shims	Q -				
Pallet	M .5				
Pallet Lever	M .5				
Total	4.5				
(7) Lining					
Back Box Plate Lining and Sq.	M .5				
Hand Rails	Q -				
Shuttle Deflectors	M .5				
Crank Arms	M .5				
Crank Pins and Set Screws	M .5				
Lay Sole	M .5				
Shuttle Race or Race Plate	M .5				
Reed	M .5				
Reed Release Rods	A -				
Reed Clamp Hook	A -				
Adj. Reed Setting	A -				
Total	.5				
(8) Harness Motion					
Harness	M 1.0				
Idle Gear and Bracket	M 1.0				
Auxiliary Shaft Cams and Boxes	Q -				
Treadle Rolls	Q -				
Sheaves and Brackets	A -				
Compensating Sheaves	M 2.0				
Lacey Tops	Q -				
Harness Rolls and Screws	Q -				
Stirrups	Q -				
End Holders	A -				
Selvage Cams	Q -				
Selvage Cam Follower	M 1.0				
Top Selvage Roll and Brackets	M 1.0				
Bottom Selvage Roll and Brackets	M 1.0				
Jack Holders	M 1.0				
Total	8.0				

advisable to make a monthly check of such items as lay guides, temple feathers, rocker shaft, box dowels, etc.

THE LOOM CONDITION SUMMARY gives a basis for rating the condition of all looms in a given fixer's section. The credits given for good, bad, or indifferent loom condition as outlined are only on those parts the upkeep of which is definitely the current responsibility of the fixer.

Particularly at this time, a routine such as described in this article is of top importance to textile mill management, because of: (1) the combined present shortage of machine repair parts and supply of fully qualified loomfixers; (2) a routine of this type avoids extended down time due to delayed repairs; anticipation of repair requirements reduces the number of repair parts otherwise required; (3) contact with all fixers throughout the month by master fixers, supported by means of setting up "Fixers Batting Averages," is one of the most direct and practicable means for improving the performance of the present supply and quality of fixing; and (4) the method cuts down lost time due to the inroads of "post-mortem" fixing, and simultaneously avoiding the losses involved in complete loom dismantling.

Fig. 3. Loom inspection report, above, face; below, back



		A	B	C	FC
(9) Pick Motion					
Picker	M 1.0				
Shuttle	M 1.0				
Pick Ball and Cover	M 1.0				
Pick Shafts	M 2.0				
Pick Arms	M 1.0				
Pick Cams, Bolts and Screws	M 2.0				
Pick Cams, Setting	M 2.0				
Picker Sticks	M 2.0				
Picker Stick Guide	M 2.0				
Parallels	M 2.0				
Power Blocks and Connection	M 2.0				
Pick Shaft Stop and Bump. Case	Q 1.0				
Set Scs. in Pick Ball Stand	M 1.0				
Total	20				
(10) Battery Gauges					
Lining Gauges	Q -				
Height Gauges	Q -				
Battery End Gauges	Q -				
Battery Dowel Pins	Q -				
Battery Lock Washers	Q -				
Lay Gauge to Front Horn	Q -				
Total	-				
(11) Brakes					
Shipper Locks	M .5				
Shipper Lock Dowel Pins	M 1.0				
Brake Adjustment	M 2.0				
Brake Release Lever	M 1.0				
Total	4.5				
(12) Boxing					
Box Plates	M 1.5				
Protector Rods	M 1.5				
Dagger Fingers	M 1.0				
Frogs and Steels	M 1.0				
Frog Stops	Q -				
Frog Lip and Lever	M 1.0				
Binders and Springs	M 2.0				
Back Box Plate Extension	Q -				
Pick Finders	M 1.0				
Shuttle Checks and Brackets	Q -				
Adj. Friction Brackets	M 1.0				
Total	12.0				
(13) Whip Rolls					
Whip Roll Shaft Bracket	M 1.0				
Whip Roll and Arms	M 1.0				
Preventers	M 1.0				
Drag Rolls	M 1.0				
Vibrating Arms and Cams	M 1.0				
Total	5.0				

		A	B	C	FC
(14) Transferrer					
Filling Feeler	M 1.0				
Filling Feeler Trip	M .5				
Filling Fork Hook	M 1.0				
Feed Pawl	M 1.0				
Hold back Pawl	M 1.0				
Straddle Bug by Fork	M 1.0				
Straddle Bug by Fil. Feel.	M 1.0				
Shuttle Feeler to Gauge	M .5				
Shuttle Feeler Weave In.	M 0				
Shuttle Feeler Protect	M .5				
Shuttle Feeler Height	M 1.0				
Transferrer and Studs	M 2.0				
Spring Hooks	M 2.0				
Bobbin Guides	M 1.0				
Bobbin Supports and Springs	M 1.0				
Bobbin Holders	M 1.0				
Bobbin Discs	M .5				
Ton Holders	M .5				
Thread Cutters Set	M .5				
Thread Guides and Holders	M .5				
Total	10				
(15) Filling Stop Motion					
Fork Clearers	M .5				
Fork Grates	M .5				
Filling Cams	M .5				
Cam Followers	M .5				
Filling Motion Trip	M .5				
Filling Motion Knock Off	M .5				
Filling Motion Stand Dowel Pins	M .5				
Let Back	M .5				
Fork Holders	M .5				
Total	4.0				
(16) Warp Stop Motion					
Warp Stop Motion Girts Set	M .5				
Side Brackets	A -				
Cam Setting	M .5				
Oscillator Arm. Setting	M .5				
Knock Off Setting	M .5				
Total	2.5				
(17) General					
Bobbin Box Brackets	M .5				
Grease	M 2.0				
Raceway Felt—Clean	M .5				
Loom Shoes	M -				
Bracing Beams	M -				
Pick Counters	M -				
Shuttle Boxes	M -				
Total	3.0				

LOOM CONDITION—SUMMARY

Group Rated	CONDITION POINTS Total	Lost	Loss Rate	Loss	Allowances	Net Points	Group Rated	CONDITION POINTS Total	Lost	Loss Rate	Loss	Allowances	Net Points
(1)	.5						(10)	—					
(2)	6.0						(11)	3.5					
(3)	6.0						(12)	12.0					
(4)	7.5						(13)	5.0					
(5)	4.0						(14)	16.0					
(6)	6.0						(15)	11.0					
(7)	3.5						(16)	4.0					
(8)	8.0						(17)	3.5					
(9)	22.0						TOTAL	113.5					

Remarks:

depending on the organization of the mill. (2) The individual or individuals employed as inspectors should have sufficient knowledge of looms and loomfixing so as to be classifiable as master loomfixers. (3) They should so conduct their examination of looms and their contact with fixers that the activity will serve as a constant source of training and improvement to all fixers. (4) In rating looms and their condition, the inspectors should be critical, impartial, and just.

In looking over this form, one will note crosses under the column F.C. Such crosses mean that the parts that they appear against are parts over which the fixer can exercise but little control or responsibility.

It will be noted also that alongside every part there is a designation, such as *M*, *Q*, or *A*. This designates the frequency with which the given part is to be inspected — monthly, quarterly, or annually.

There is not very much point in carefully examining the breast beams more frequently than once a year. A quarterly inspection of the rocker shaft has been found sufficient, whereas it is

Steam Economies in the Mill

Measures which will permit reduction of costs in spinning and weaving plants

By PAUL L. GEIRINGER
Textile Industry Research, Inc.

Considerable savings in steam can be effected by use of temperature-control instruments on slashers

EFFICIENT PRODUCTION OF HEAT for mill building and process purposes and use of steam-consumption records for the various departments of textile plants were discussed in an article in the December, 1941, issue of TEXTILE WORLD. In the present article are considered economies which can be effected in heating of rooms, in slashing, and in other operations in spinning and weaving mills.

Room heating equipment in spinning and weaving plants is often the most neglected part of the mechanical equipment in the mills. Frequently the heating equipment is inefficiently designed and lacks adequate shut-off and control devices. If heating of the rooms is to be carried out most economically, the amount of heat radiated must always be proportioned to the outside temperature. This calls for a centralized control system, and can be accomplished more easily with hot-water heating than with steam heating. However, heating with low-temperature hot water (180 to 200° F.) is not very practical for large buildings. On the other hand, high-pressure hot water heating plants, supplying water at temperatures up to 400° F. have been installed in textile mills with the best of success for both room heating and process heating.

Due to its high over-all efficiency and other advantages, the high-pressure hot water heating method has been widely adopted in Europe. In this system the temperatures range from 280 to 400° F., allowing a much greater temperature drop than conventional systems. The hot water is taken directly from the boiler or, preferably, from a special heater. No condensate traps or pressure-reducing devices are necessary. Fuel economies of 15 to 25% are effected. However, the design and installation of a high-pressure hot water heating system are not easy and require expert knowledge and experience.

A well-designed room heating system should provide adequate distribution of the heating surfaces in the room. The radiating surfaces should be so placed as to avoid accumulation of hot air in the upper parts of the room. Otherwise, heat losses will be unnecessarily high, especially if there are many skylights in the ceiling. Good distribution of air in a large room can be obtained efficiently by means of unit heaters. The heaters, which should not be too large, should be so arranged as to maintain the desired temperature and also to provide good circulation of the air in one direction within the room. It is a good policy to provide static radiation surface to compensate for about one-fourth to one-third of the actual heat losses.

To avoid recirculation of too much stale air, at least one-half—if not all—the unit heaters should have access to a fresh-air supply. If central temperature regulation is not provided, the unit heaters should be equipped with temperature controls which regulate the valves, or, at least, the fan motors to stop the air circulation when the correct room temperature is reached. Too high a temperature should not be maintained, as overheating of rooms will result in lower employee efficiency. Good standards have been established for room temperatures for various operations, and these should not be deviated from to satisfy the whims of one or two operatives who would prefer a higher temperature.

FOR ECONOMIC OPERATION, shutting off the heat at night (providing, of course, there is no night shift) is essential. Only during an extraordinary cold spell, it might be partly true that it requires more fuel to raise the rooms to right temperature in the morning than to continue the heating during the night.

In general, the cost of room heating in a spinning and weaving mill should not exceed 6 to 10% of the total cost for power and process steam (if produced by the mill). The cost will vary, of course, depending on the construction of the mill and the climate. If the heating system is not properly designed, the heating costs may be much higher. Constant supervision of the heating system is essential. A thorough check

MILL _____ WEEK ENDING _____

PRODUCTION OF SLASHER No. _____

Style	Running time of the lot			Pattern			Length of lot	Weight of lot	Yarn speed per hour	Weight produce per hour	Number of warp beams
	Start	End	Duration	Width	Yarn #	Ends					
34	12:10	3:55	3:45	95	20	1840	3950	223.3	1053	59.5	6
277	4:30	8:40	4:10	74	30	1570	6300	198.3	1512	47.6	4
254	5:30	10:20	4:50	75	22	1570	6600	263.7	1366	54.6	5
35	6:00	1:20	7:20	84	24	3000	7000	526.5	955	71.8	11
720	2:00	7:00	5:00	84	20	2180	4740	304.6	948	60.9	7
180	7:30	2:55	7:05	32	30	2470	8600	440.9	1214	62.2	9
69	12:00	3:15	3:15	84	16	1900	3780	264.0	1163	81.2	5
314	3:45	8:20	4:35	75	24	1480	7000	258.0	1527	56.3	6
160	5:30	10:40	5:10	84	20	1780	5925	313.5	1147	60.7	7

Superintendent _____

Form for checking-up slasher production

should be made once a year by an expert heating engineer to determine whether or not the lowest possible fuel consumption is being obtained. Instruments for recording the heat consumption of the mill or the individual departments are needed for this task.

HUMIDIFICATION IS IMPORTANT, of course, in most spinning and weaving operations. To maintain proper humidities and adequate air changes, requires additional heat for raising the temperature of the water and fresh, cool air to the proper point. In weave sheds, particularly where high humidities are needed for automatic weaving, working conditions will not be the best unless humidification is accompanied by adequate air changes. Humidifying a room by permitting steam to escape directly into the air—a practice sometimes used in winter, especially in mills in the North—is usually inefficient.

In spinning mills only a very little heat is required for processing. Vacuum extractors for card stripping and yarn steaming may require some steam. However, the writer believes that equipment employing steam for producing vacuum is obsolete and should be replaced by equipment using electric power. Likewise, use of steam to increase the moisture content of yarn is usually inefficient. Usually the same effect can be obtained without application of heat. Where steam is needed for setting twist, closed equipment operating at very low pressure or under a vacuum should be used, as open-basket steaming is wasteful.

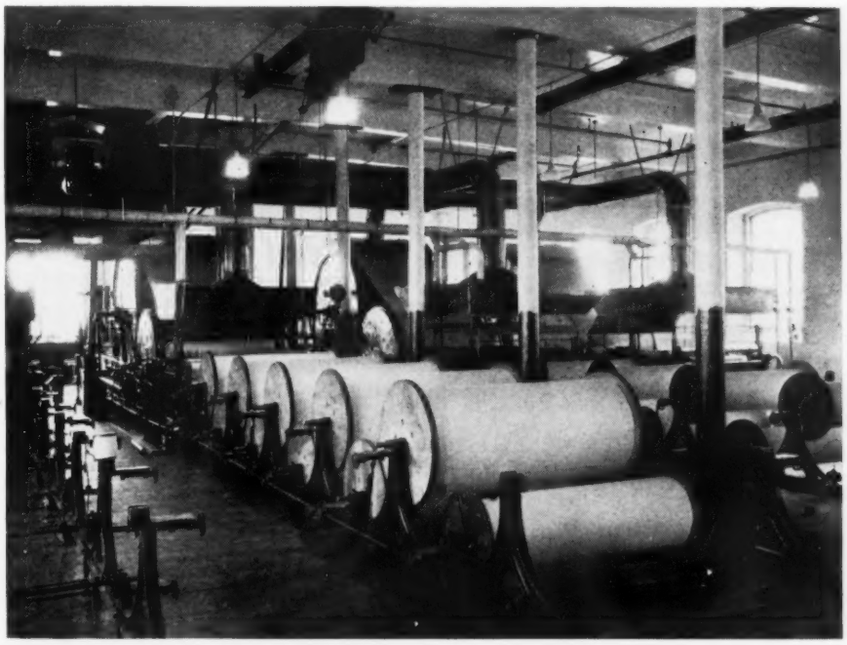
Gassing of fine cotton yarns requires considerable heat. City gas, if available, is the usual source of this heat. Natural gas, butane gas, or gas produced from kerosene, gasoline, or coke may be cheaper; and it is worth while to investigate the feasibility of using one of these.

IN WEAVING MILLS the only important use for steam is in the slashing operation. Considerable savings in steam can be effected by use of temperature control instruments on the size tank. Constant circulation of the size between the size box and a small, heated reserve tank located near the size tank will aid in keeping the size at a constant temperature and has other advantages.

The drying capacity of slashers is often impaired by insufficient drainage of condensate and incomplete deaeration. If, in an endeavor to overcome these conditions, the valves which short-cut the condensate valves for cleaning purposes are kept open, steam consumption is increased enormously. Instead, devices designed especially for overcoming these difficulties should be employed.

Frequent checking of steam consumption by slashers may result in considerable economies—1.5 to 1.6 lb. of steam to 1 lb. of yarn slashed is a fair average for slashers with drying cylinders. Increased slasher production of 20 to 35% can be obtained by blowing hot air on the cylinders or by adding radiant surfaces.

The accompanying form for use in checking the efficiency of slashers has been introduced by the author in various plants. It shows the production of the slasher clearly, and can be used in conjunction with a record of steam supplied to the slasher to determine whether or not steps should be taken to bring the steam consumption to an efficient level.



Humidification should be accompanied by adequate air changes; at least half the unit heaters in a room should have access to a fresh-air supply.

FROM THE EDITOR'S MAIL-BAG

"The Blight Before Christmas"

BURLINGTON, N. C.

Editor, TEXTILE WORLD:

With our country at war, and so many of us in the textile industry under the unrelenting pressure incidental to Government orders, priorities and other headaches common to all wars, it is refreshing to find something amusing in the trade journals when we have settled down in the easy chair to learn what our fellow workers are doing.

Therefore, I wish to thank you for giving us the jolly jingle "The Blight Before Christmas" which was the spice of your current December issue of TEXTILE WORLD. And I am sure if Clement Clark Moore were living today he would forgive you for using his beautiful poem "The Night Before Christmas" as a pattern for spreading a little mirth and humor at this Yule season.

I am a firm believer in the practice of savoring editorials with wit and humor to convey a thought. And I am glad that you have taken the initiative in this respect.

JULIAN W. HUGHES

* * *

WASHINGTON, D. C.

Editor, TEXTILE WORLD:

If you can make the rest of your magazine as good as the poetry in the December issue I think you may expect a remarkable increase in circulation.

Merry Christmas and best wishes.

Sincerely yours,

JAMES P. DAVIS,
Assistant Administrator
Office of Price Administration

"Where Do We Go From Here?"

NEW YORK, N. Y.

Editor, TEXTILE WORLD:

This is to compliment you on the wonderful editorial, "Where Do We Go from Here?" (November, 1941.)

It is just about the clearest thinking I have seen on the subject of present conditions and what to do about the future. My only regret is that you use the textile industry, as of course you had to. If one were to substitute the name of any other industry throughout your editorial it would apply just as well.

I have already shown it to a number of my clients. It has worked most effectively in waking some of them up. I certainly hope that it gets wide publicity for it will do a tremendous amount of good.

R. T. O'CONNELL,
R. T. O'Connell Co.

The Textile Research Institute

Editor, TEXTILE WORLD:

As usual I get a great "lift" out of reading your editorials. The whole question of research in the textile industries has a great appeal to me. I hope the coming of war will not handicap the start made by the Textile Research Institute at its meeting in New York. I have a profound belief that unless we keep and develop the spirit of research during this World War the outcome will be chaos.

It is not a time for any group to give lip service to a word. It is increasingly evident that every business practice, every production method, every manufacturing policy, that has been thought secure must be re-examined. Industry must carry enormous burdens of added costs—costs of direct taxes, costs of higher wages, costs of the intangible values which war ruthlessly destroys. The only logical answer that I can find in my mind, if we are to preserve the structure of American industry, is that American industrial management must find ways to reduce unit costs in order to carry these enormous new overheads. Perhaps we must find new manufacturing processes that eliminate spinning and weaving that have already been found in some minor textile enterprises. Certainly we will come out of the war with new knowledge of materials. Manufacturing in the textile industries can no longer be a by-product of buying raw materials and selling the finished product.

There must be an inexorable drive on costs with a knowledge that we can not find it by some simple expedient like reducing wages or buying cheaper. The processes of research must be focused by every industry including the textile industries on this drive.

The war is going to sharpen the need for production on a time basis without regard for costs. We are going to revamp a good many industrial practices in order to get production quicker, and part of this knowledge will be available in the fight on costs rather than time alone when the war is over. The producers of the raw fibers for the industry must join with the users of the fibers and the marketers of the finished effort. The Textile Research Institute provides for the first time the organized machinery for the setting up of a committee to tackle these problems. It provides the machinery for collecting funds to make possible the necessary group research on these problems. It may be the means of reestablishing a growing industry upon which the livelihood and happiness of several million people depend.

FREDERICK M. FEIKER, Dean,
The School of Engineering,
George Washington University

* * *

BIRMINGHAM, ALA.

Editor, TEXTILE WORLD:

I think it is wonderful that we have you, with all that means, so deeply interested in this Textile Research Institute. I am just hoping that during the time the Textile Foundation has money the Institute will get a good start and get on its feet, so it can stand alone and perform a great service in this industry for years to come.

DONALD COMER,
Chairman of Board, Avondale Mills

* * *

PRINCETON, N. J.

Editor, TEXTILE WORLD:

I liked very much the presentation of the research problem as you developed it in your editorial and story in the December issue of TEXTILE WORLD.

HUGH S. TAYLOR,
Department of Chemistry,
Princeton University

* * *

WASHINGTON, D. C.

Editor, TEXTILE WORLD:

The story of the rejuvenated Institute in the December issue of TEXTILE WORLD is excellent. I can offer only praise for this presentation.

WM. D. APPEL, Chairman,
Technical Research Committee,
Textile Research Institute, Inc.

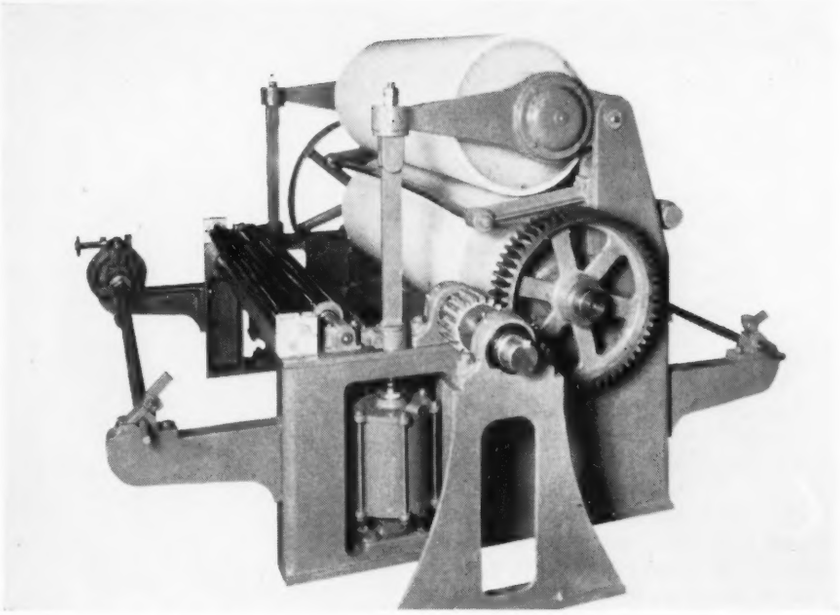
TEXTILE EQUIPMENT NEWS

Two-Roll Padder

A 2-roll padder with air cylinders, designed for the dyeing of rayon fabrics, is said to be producing deeper shades than ever before possible at a speed range of 15 to 45 yd. per minute. Controlling pressure with air cylinders has proved remarkably effective; the operator can always arrive at the same shade when using the same formula, states the manufacturers, H. W. Butterworth & Sons Co., 2417 E. York St., Philadelphia. Should there be any difference in the construction of a fabric from one side to the other, the pressure can be increased or decreased on either side at will.

The machine has a capacity of 10,000 lbs. on each side, which would give a maximum pressure of 10 tons on the nip; it is equipped with a panel containing necessary recording instruments for applying or releasing pressure. Cloth is delivered from the padder with a minimum amount of moisture, it is said, thus speeding the drying operation. The machine has two large rubber covered rolls, and the large diameter of the rolls is said to guard against deflection. The stainless-steel liquor box has the necessary threading-up rolls and breast rolls; it is designed principally for rayon fabrics but can be used for certain other types of cloth without change.

The machine is equipped with a balanced friction let-off at the entering side and a slip belt winder at the delivery side. Choice of drives: directly-connected motor to bottom roll, geared motor through V-belt, or from motor through variator to jack shaft.



Two-roll padder with air cylinders (Butterworth)

Warper Creels

Magazine and single-end creels are a recent development of Robert Reiner, Inc., Weehawken, N. J. The creels are designed to draw off over-end from cylindrical or conical packages, and are capable of carrying 4-lb. cones of rayon. A removable combination cone-holder, suitable for filament or spun rayon, cotton, woolen and worsted yarns is supplied.

Creels are supplied in sections each ten spindles high. They are designed to be loaded from the inside, and it is stated cones on the creel can be conveniently knotted without reaching around posts. Bobbin or cone holders swing backwards to facilitate loading.

A movable tension gate is utilized for control of balloon; and a highly sensitive drop-wire warper stop-motion, equipped with signal lights, calls immediate attention to yarn breakages. Push-button stations are provided to enable stopping of the warper from the creel position.

Warper creel (Reiner)

Black-Out Paint

For use in darkening windows and skylights of industrial and commercial properties where it would be impractical to extinguish lights at the sound of an air-raid warning, a black-out paint termed Valdura Black-Out, has been announced by American-Marietta Co., 42 East Ohio St., Chicago. The paint had been undergoing development in the company's laboratories for several months and final tests were speeded with the Japanese attack on United States possessions in the Pacific.

The product is marketed in paste form, and, when cut 50% with water, can be sprayed or brushed on windows to prevent all passage of light, it is stated; coverage is 800 sq. ft. to the gallon. It dries within 40 min., and is said to provide a flat surface that will not flash-back or glare when hit by artificial light used within the room. In interior applications, a single coat

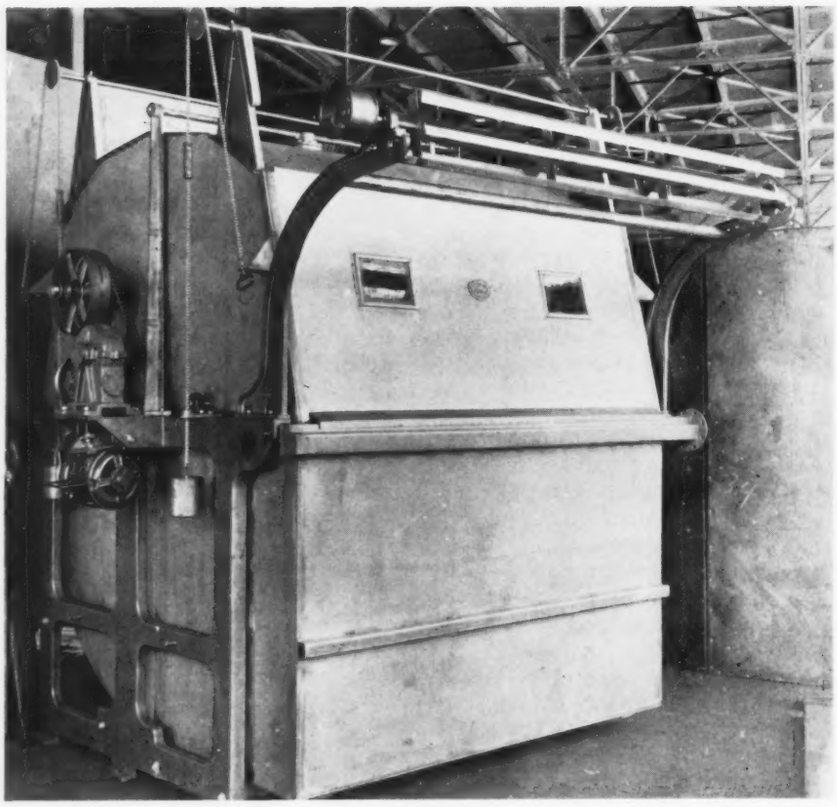
may be covered with a white paint where large glass surfaces make the higher reflection properties of a white surface necessary. Removal of the product is made without damage to the glass, it is said.

Piece-Dye Kettle

James Hunter Machine Co., North Adams, Mass., is currently announcing the newest addition to its line of dyeing equipment: the Model NK, totally-inclosed, stainless-steel, piece-dye kettle. The kettle is designed to handle a wide variety of fabrics, ranging from mohair plushes, woolens, worteds, union fabrics, and blankets to spun-rayon suitings. A variety of sizes are available, the manufacturers stating that the kettle can be built to any reasonable specifications as to width, depth, and length.

The machine differs from its predecessor, the Model N, in that all reels, whiproll, delivery roll, and main drives are carried in a separate, rigid cast-iron frame. The tank is constructed of self-supporting stainless steel, cradled at the bottom in stainless-steel-covered cross girts. The inclosing doors are also of stainless-steel construction and feature easily raised doors front and back. All doors are equipped with windows and with acid-proof lights and fixtures, to aid observation of fabrics during processing.

The totally-inclosed feature is said to assure steam savings of 25 to 35% over open kettles.



Inclosed piece-dye kettle (Hunter)

Instantaneously Reversible Motor

For use on hoists, lathes, and other industrial equipment where instantaneous reversing is necessary, a new capacitor-start reversing motor has been announced by Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. Available in ratings of from $\frac{1}{6}$ to $\frac{3}{4}$ hp., single-phase, 60 cycle, the motor operates at 1,725 r.p.m. on 115 and 230 volt circuits. To reduce maintenance, no brushes or commutators are used.

To reverse the motor it is necessary simply to throw the controlling drum switch from one side to the other.

High-Voltage Starters

A new line of 2300-volt, 60-cycle, general-purpose starters especially designed for protection against short circuits and overloads has been announced by Industrial Control Division, General Electric Co., Schenectady, N. Y. Composed of an oil-immersed contactor with self-cleaning copper tips, wide metal bearings, and copper-braided shunts for long life, and the new EJ-2 current-limiting fuses for short-circuit protection, the control and bus structure is completely metal-inclosed for compactness, easy installation, and safety.

There are four standard types of starters in the new line, providing for full-voltage starting, reduced-voltage starting, and reversing of squirrel-cage motors and synchronous motors. Starters for special applications are also available.

Motors are protected against overloads by isothermic relays which operate in case of locked rotor, single-phasing, or sustained overload. Undervoltage protection is provided; on low voltage or loss of power the line contactor opens and on return of power the motor will not restart until the push button is operated.

Fluorescent Lighting Units

A new line of continuous-row Miralume fluorescent lighting units, designed to provide ultra-efficient lighting for industrial operations, has been announced by Hygrade Sylvania Corp., Ipswich, Mass. The units may be joined end to end with one another to form a continuous wireway enclosure. Thus, instead of providing a single electrical outlet for each unit, one outlet can be made to supply a row of units.

Easy maintenance is cited as a feature of the new units. Reflectors are attached to top housings by fittings which, it is stated, cannot break up or chip the high-quality porcelain reflecting surface, and starters are located in the top housing where they are easily accessible without removing the lamps. Four different units are offered; they operate on 110–125 volt, 60 cycle a.c., and can be supplied for 50 cycle a.c. on request.

For Workers in Noisy Places

For reducing detrimental effects of noise upon workers, Mine Safety Appliances Co., Pittsburgh, Pa. has announced ear defenders, said to decrease fatigue, irritability, and nervous exhaustion experienced by workers in or about noisy operations. The ear defenders reduce loud noises by 35–45 decibels or to about 1/10 their former loudness, yet are said to be so designed that warning signals and conversation can easily be heard. Better concentration by workmen and in-

creased efficiency are cited as advantages obtainable through use of the ear defenders.

Essentially, each ear defender is a tapered tube molded from surgical-type soft rubber, consisting of two barriers, an outer one of metal and an inner one of soft rubber, separated by an air space. This tapered construction, it is said, permits easy insertion and removal without any danger of coming in contact with the ear drum.

Brushing Machine

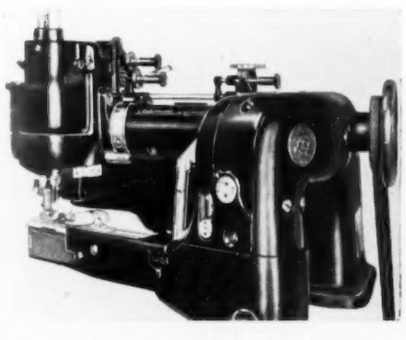
A brushing machine with new features cited as adding greatly to efficiency and long machine life has been placed on the market by Hermas Machine Co., Hawthorne, N. J. Sand rolls are turned and balanced and covered with fine or coarse garnett cloth, as desired. All rolls and brush bodies are made from hollow steel and are designed to eliminate warping, with resulting uneven brush pressure.

The machine is equipped with controls affording graduated pressure on rolls and brushes and making it possible to give cloth a light brushing or a very drastic cleaning.

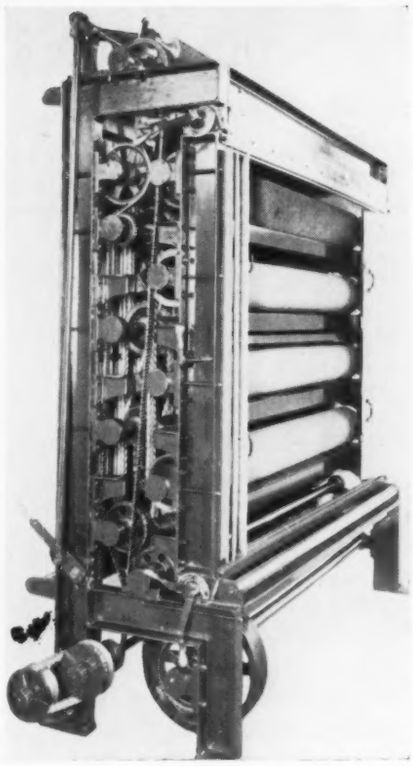
All drives are placed inside the new machine, to save floor space and protect operatives. Bearings and shafting have been redesigned to permit safe operation up to 1,000 r.p.m. roll speeds. Individual suction hoods are fitted along the rolls, connected with a vertical exhaust stack that carries away brushings.

Sewing Machine

Maximum production with improved ease and comfort for operatives and increased facility and simplified adjustments for mechanics, are highlighted features of a new automatically lubricated Feldlock sewing machine being introduced by Willcox & Gibbs Sewing Machine Co., 214 W. 39th St., New York. It is designed to make practical speeds of up to 4,500 stitches per minute where plant and operating conditions permit. Stitch range is 9 to 22 per in. on lighter materials, and 7 to 22 per in. on heavier fabrics. The machine produces U. S. standard stitch Type 401.



Automatically lubricated sewing machine (Willcox & Gibbs)



Vertical brushing machine (Hermas)

A force-feed lubricating system built into the machine is said to assure that all moving parts are continually flushed internally with oil under pressure. The system is designed to be completely automatic; all that is necessary is an occasional check on the supply of oil in the base of the machine, and maintenance of the oil supply at proper level, as indicated by a conveniently located sight gage.

Increased clearance for disposal of work is another design feature of the machine. So, also, is the single solid base, which it is stated not only contributes to the increased clearance, but also aids operative comfort and efficiency and simplifies machine installation.

Electric Hoist

Robbins & Myers, Inc., Springfield, Ohio, have developed a new steel hoist said to provide efficient, low-cost material handling for all types of industry. The new hoist, known as the F–½, is built in 1,000 and 2,000-lb. capacities. It is designed to occupy a minimum of headroom space with maximum lift power. All gears and shafting are made of alloy steel with approximately 278,000 lb. per square inch tensile strength. The main frame is of welded steel plate. Both sizes are powered by R & M high-torque hoist motors. Control is by means of push-button pendant with single or two speeds for polyphase a.c. current. Provision is also made for 110–220 volt single-phase current. It is stated the new hoist can be applied to any make of monorail. Motor-driven trolleys with speeds of 60 to 100 ft. per min. at single speed and with push-button can be provided.

Useful Accessories for Textile Mills

A finger guard combining tough leather and flexible lastex has recently been designed by Industrial Gloves Co., Danville, Ill. The new safeguard, the manufacturer states, is comfortable, clean, easy on, easy off, light weight and durable; can be worn under glove.

A self-sealing, one-coat flat wall paint known as Devopake has been put on the market by Devoe & Reynolds Co., Inc., 44th St. and 1st Ave., New York. It is stated that the paint requires no primer even on new work, and covers equally well over any type of surface, plaster, wallboard, wall paper, even acoustical board, with equal success.

The paste type colloid mill recently introduced by C. O. Bartlett & Snow Co., Cleveland, Ohio, is said to minimize aeration and foaming, and to produce excellent disintegrations and dispersions of materials such as soaps, paper and leather coatings, rubber compounds, textile finishes, greases, etc.

A manual starter switch and three new lampholders designed to simplify use of fluorescent lamps have been announced by General Electric Co., Bridgeport, Conn. The starter switch is for use with portable lamps in one- and two-lamp combinations; the lampholders include a weatherproof model; a shallow rotating-lock type; and a type designed for flush or surface mounting in connection with small lamps.

A power control valve for high-pressure installation from 1,800 to 2,500 lb. is announced by Consolidated Safety Valve Div. of Manning, Maxwell & Moore, Inc., Bridgeport, Conn. It is an automatic relief valve and can be set for 1% or less difference between opening and closing pressure. Advantages cited include more accurately balanced boiler operation at peak loads, more

uniform line pressure, and reduced valve maintenance expense.

An improved respirator for protection against dusts and mists is being introduced by Mine Safety Appliances Co. Pittsburgh Pa. Featured are a new one-piece throw-away filter, and the fact that all parts of the filter can be quickly and easily disassembled for washing and sterilizing.

A concentrating floodlight bulb designed for high bay lighting in industrial plants has been developed by Birdseye Div. of Wabash Appliance Corp., 335 Carroll St., Brooklyn, N. Y. Thirteen sizes, ranging up to 1,500 watts, are available.

Two new mixers incorporating air-driven motors have been added to the line of Mixing Equipment Co., Rochester, N. Y. Features cited include quickly removable shafts for ease in cleaning, adjustable shaft length for use in containers of various sizes, and sturdy construction. The mixers, it is said, can be attached to any container or vessel.

Self-aligning idlers for flat-roll conveyor belts have been announced by Link-Belt Co., 307 N. Michigan Ave., Chicago. They have centrally pivoted cross members which, besides being equipped with flat idler rolls for supporting the belt, have vertically-mounted actuating rolls at each end for lightly contacting the edge of the belt when its lateral misalignment exceeds a predetermined amount.

Transparent glass block for building purposes, said to afford almost window-like vision, was announced recently by Pittsburgh Corning Corp., Pittsburgh, Pa. Trade-named "Vue," the new glass block was developed to meet needs where some outside vision is desired through panels of non-transparent glass blocks. It is said to help prevent a "shut-in" feeling, although visibility of sharp detail is not generally possible.

A.c. transformer welders in 300, 500, 750 and 1,000 amp. capacitiess have been announced by Wilson Welder & Metals Co., Inc., 60 E. 42nd St., New York. The new welders, designated Model TW are completely self-contained units; they are said to operate cooler and therefore last longer.

A high-pressure, vertical triplex power pump is now supplied in eight sizes by Worthington Pump & Machinery Corp., Harrison, N. J. Pressures range up to 9,800 lb. and capacities up to 51 g.p.m. The pump is said to be particularly suited to applications where small capacities and high pressures are required.

New Dyes and Chemicals

Synthetic Pine Oil

Development of a new method for the synthetic production of pine oil from gum turpentine has been announced recently by Hercules Powder Co., Wilmington, Del. This new process insures an increased supply of pine oil for industries engaged in war work and possibly will make available some supplies for non-war uses. Pine oil produced by the new method is said to have substantially the same chemical and physical properties as natural pine oil. One important textile use for pine oil is in the manufacture of wool goods for military purposes, where it is employed in scouring and fulling operations. It also finds application in processing various types of cotton fabrics required by the Government.

General Dyes

General Dyestuff Corp. announces the following new products: Methylene Violet 3RA Extra, a basic dye producing a bright, reddish shade of violet; it is recommended for dyeing mordanted cotton or rayon, silk, and other fibers when brightness of shade is the principal requirement; due to its good resistance to Rongalite, it can also be used for colored discharge printing.

Rapid Fast Yellow GGH Powder, a Rapid Fast Color, yielding bright, fairly greenish shades of yellow possessing good fastness to light and chlorine and very good fastness to washing.

Katigen Deep Black NND Extra Conc. New-CF, a non-dusting sulphur color which produces full greenish blacks of very good fastness to cross-dyeing, perspiration, washing, and light.

Calco Color

Calco Chemical Division of American Cyanamid Co. announces the following new product: Calcochrome Yellow NFC., a chrome color especially recommended for use in formulations for standard Government shades on wool; dyeings have very good fastness to carbonizing and excellent fastness to light.

New Publications

Industrial History, Revised

THE DEVELOPMENT OF AMERICAN INDUSTRIES (Revised Edition), edited by John George Glover and William Bouck Cornell; Prentice-Hall, Inc., New York; $4.00.

The first edition of this book was published in 1932. It was realized that, in order to appreciate the significance of our advanced civilization, it is necessary to understand its industrial background and to examine the history of the development of major American industries and their phenomenal growth over the last two centuries. Consequently Professors Glover and Cornell, both of New York University, secured the cooperation of representatives of 39 major industries as contributors.

Since its original publication, social, economic and business changes have made a revision necessary. Statistics have been brought up-to-date, changes in the status of industries have been explained, the effects of legislative enactments have been stressed, changes in methods of production have been discussed, and new products have been described. The effect of war conditions has of course been recognized but has not been unduly emphasized since the final outcome of the Second World War, and the ramifications of that result will have to be known before anything can be written that would be more than a matter of opinion or surmise.

Chapters covering textile manufacture include "The Textile Industry from Prehistoric Times to 1930," by M. D. C. Crawford, of Fairchild Publications; and "The Modern Textile Industry," by Douglas G. Woolf, editor, TEXTILE WORLD.

More Fascinating Than Fiction

THE WAYS OF FASHION, by M. D. C. Crawford; G. P. Putnam Sons, New York; $3.00.

A more appropriate person could not have been bent to write such a book as The Ways of Fashion, for it is Mr. Crawford's acumen at editing and interpreting details from his own background—plus his own inimitable opinions—that make this history of the apparel arts such charming, fascinating reading. It is not a cut and dried accounting of past events, but a flowing, factual picture dotted with personali-

ties and emphasizing what must be done to bring the fashion industries safely through current events and conditions.

Mr. Crawford says that "neither in culture nor in industry do we compete with France, but we are component parts of the same culture." Therefore, "America as Fashion Center" is more a matter of ballyhoo than actuality. It is the international aspects of the costume art culture that give it the life blood so necessary to fashion and its whims. He emphasizes the part museums must play and the necessity for training new thought—new talent—if fashion is to live as a cultural art.

Deploring the serious lack of "style" cottons (with raw material in such abundance) as well as the "quantity" obsession of most textile mills, Mr. Crawford admonishes, ". . . as in farming, there must be a seed time, a cultivation period, as well as a harvest."

A Whistle-Stop Community of the Deep South

POSSUM TROT, by H. C. Nixon; University of Oklahoma Press, Norman, Okla.; $2.50.

This collection of chapters—each a separate study—is an honest, unvarnished story of the small whistle-stop communities of the deep South. Professor Nixon uses few statistics but many personal anecdotes to portray the evolution of the combination country-store and post office to the filling station and R.F.D. system. He tells of the people who grew up in the isolated neighborhoods exemplified by Possum Trot and who left to enter many walks of life in more lucrative sections of the country. He tells of the reasons for this dissemination of good citizenship material: soil erosion, poor land, lack of diversification, all of which totalled up into more and more hopeless mortgages. And after carefully annotating the changes for the worse which took place in and about many such spots as Possum Trot, Professor Nixon tells of the New Deal and its Triple A program; rural electrification; conferences on social science and the tremendous influence these and other similar factors are having in bringing new life and new hope to the rural South and its regional-conscious people.

Professor Nixon has written other able studies on the South's economic problems, but none is better than this one, which should be included in the library of every thinking man of that section. Particularly is it valuable to those in the cotton-textile industry whose business is based upon the chief agricultural product of Possum Trot, and whose mill personnel is drawn largely from such communities.

Sight Saver

EYE HAZARDS IN INDUSTRY; Louis Resnick; Columbia University Press, New York; $3.50.

Every 30 seconds throughout every working day an American working man suffers an eye injury. Every day of the working year 26,880 workers are idle because of eye injuries. This book tells why and how occupational eye accidents and diseases occur. It explains how to prevent such accidents and diseases by means of mechanical guards, process revision, proper lighting, employed training, and administrative supervision. Textile mill executives owe it to themselves and to their employees to read this book and to make it available to their safety committees, plant nurses and physicians, and operating executives in charge of those departments where eye injuries are likely to occur.

For Textile Small-Fry

SPIN, WEAVE AND WEAR, by Phyllis Ann Carter; Robert M. McBride & Co., New York; $1.75.

A common failing of grown folks is to overlook the curiosity shown by children in questioning the reasons why and how of everyday familiar objects. For instance, cloth from which their clothes are made—why do they wear woolens, and cottons and silk? Where do they come from; how do they get to be cloth?

At last we have an interesting informative book to answer a child's questions about wearables. It reviews the beginning of the art of weaving; the origin and preparation of the various fibers; and then tells briefly of the manufacturing phases of the textile and garment industries of today.

This is a child's book, and since all men are interested in what may be interesting to their children, they will want to take this book home. Particularly should this be true of men who are both textile manufacturers and fathers.

Making a Morale Survey

HOW TO MAKE A MORALE SURVEY, by Eugene J. Benge, National Foremen's Institute, Inc., Deep River, Conn.; $7.50.

It has never occurred to this reviewer that a morale survey could be important, or that a firm should ever make a morale survey. We just took morale for granted, high in some spots, low in others, but that a survey could open the door toward cleaning up a bad place had never entered our mind. Yet, how simple a good morale survey is—and how quickly good results could be obtained in a plant or an office, if one was handled correctly.

"How to Make a Morale Survey" is a good story. It sold this reviewer on the idea, because it pointed out the reasons for a survey and because it told how one should go about making one, listing types of questions, showing how to tabulate results, giving a few charts, etc., to illustrate points in question. All helped to show the constructive phases of a morale survey.

The National Foreman's Institute has done a swell job on this piece of work, and this reviewer would tell more about it but has to hurry up and conduct a morale survey in the textile plants for which he works.

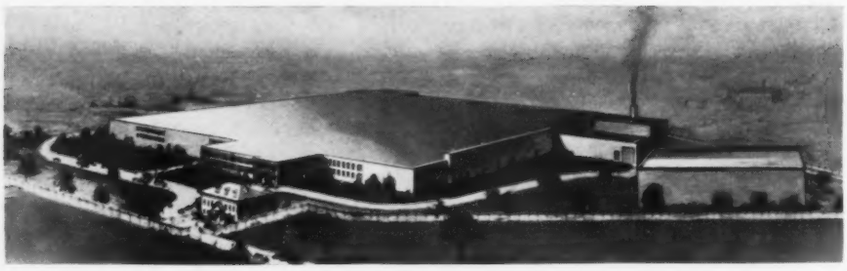
News of Suppliers

E. F. Houghton & Co., Philadelphia, held "open house" for stockholders and customers on Dec. 11 to mark completion of their new three-story office building, equipped with such modern features as glass-block construction and air conditioning. The structure is at Third, Orianna and Lehigh Ave., adjoining the company's plant. Its completion, according to announcement by Major A. E. Carpenter, president, represents only a part of the company's expansion program to take care of added direct and indirect defense work, as increased manufacturing and shipping facilities have also been provided.

Celanese Corp. of America, New York, has completed its merger with Celluloid Corp. The Celanese Corp. has also moved its engineering departments and purchasing agent's staff from Cumberland, Md., and Pearisburg and Narrows, Va., to New York.

Republic Textile Equipment Co., New York, has been organized by Robert L. Gilman at 40 Worth St. to specialize in refinancing, appraisal, sale and liquidation of mill properties.

Union Special Machine Co. branch at Atlanta, Ga., occupied its new building last month. It is located at 835 Spring St. P. T. McLendon and D. C. Hogan



ALLIS CHALMERS MFG. CO., Milwaukee, Wis., has begun erection of a $9,000,000 plant of which above is architect's drawing. It is a 500x800 ft. single-story building, without windows except in office areas. It will be completed in six months and will be used for manufacture of superchargers for aircraft engines.

are branch manager and office manager, respectively. Ground was broken for this building last August.

Permutit Co. of Canada, Ltd., has appointed S. A. McWilliams, Ltd., 60 Front St. West, Toronto, Ontario, as its representative in the Province of Ontario. The company continues to be represented in Montreal by C. K. McLeod, and by Stanley Brock, Ltd., in Winnipeg and Calgary.

Troy Whitehead Machinery Co., Charlotte, N. C., is constructing an 80x120 ft. warehouse.

Southern Franklin Process Co., Greenville, S. C., has transferred Jim Garner to the Greensboro, N. C., territory.

W. S. Moore & Sons, Albemarle, N. C., overhaulers for textile mills, have moved their headquarters and are now at Rockingham, N. C.

Dary Ring Traveler Co., Taunton, Mass.—By the will of Bertha G. Dary, former owner and manager of the Dary Ring Traveler Co., who died on Nov. 22, the income from this business has been left to her employees for the next five years. At the end of that period the business is to be sold and the proceeds divided between two local charities. Meanwhile the plant will be operated under a trust.

Quaker Chemical Products Corp., Conshohocken, Pa., has appointed Dr. Johan Bjorksten as director of its laboratories. Dr. Bjorksten was formerly chief chemist, in the order listed, of the Felton Co., the Pepsodent Co. and Ditto, Inc.

Emmons Loom Harness Co., Lawrence, Mass., and Charlotte, N. C., has appointed A. Polak, Caixa Postal, 362 Rio de Janeiro, Brazil, as Emmons agent in Brazil.

Bunting Brass & Bronze Co. has removed its Atlanta, Ga., office and warehouse to new quarters at 542 Spring Street N.W. The company's Kansas City sales offices and stocks have been established at 1821 McGee Street.

Trust Co. of Georgia, Atlanta, Ga., has appointed Jasper C. Osborne to take over the management of its factoring division, according to Marshall K. Hunter, vice-president of the bank in charge of the division. Mr. Osborne has been for the last eight years with Crompton-Richmond Co., New York.

Diamond Alkali Co. of Texas has completed construction of its new plant at South Lamar and Lenway Sts., Dallas, Texas. The plant was built to supply the increasing demand for silicate of soda and silicate products in the Southwest. Furnaces were fired recently, and the plant is running full.

International Nickel Co., New York, has appointed three new assistants to J. F. McNamara, Monel sales manager. They are W. J. Calnan, H. D. Tietz, and E. A. Turner. At the same time H. E. Searle, formerly an assistant to Mr. McNamara, has been transferred to the Nickel Sales Department under R. L. Suhl, sales manager. C. J. Bianowicz becomes head of the Chemical Section of Monel Sales to succeed E. A. Turner.

AMERICAN ROLLING MILL CO. included a large Christmas card (shown above) with every shipment of iron, steel and stainless steel sheets made during the recent holiday period. The cards measured 14 by 20 in.

General Electric Co., New York, has transferred Elliott Harrington, from sales manager of the GE air-conditioning and commercial refrigeration department, at Bloomfield, N. J., to become manager of sales of the Schenectady induction-motor section of the G-E industrial department.

Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., has elected T. I. Phillips as a vice-president. He started with the company as a tool maker in 1915 and has been assistant to the president since last February.

SKF Industries, Inc., Philadelphia, have won the Navy's "E" pennant for Excellence of performance on Navy contracts. **Rear Admiral A. E. Watson** made the presentation, and **William L. Batt,** SKF president, gave the acceptance speech.

Hyatt Bearings Division of General Motors Corp., Harrison, N. J., is this year celebrating its 50th anniversary. Back in 1892 when John Wesley Hyatt, one of America's foremost inventors (father of the plastics industry through his previous invention of celluloid), established the Hyatt Roller Bearing Co., American industry was running chiefly on axle grease and plain bearings. His invention of the roller bearing and later developments by other anti-friction bearing builders ushered in a new machine age. Alfred P. Sloan, Jr., now chairman of the board of General Motors Corp., began as a Hyatt draftsman and was president of the company when it was brought into the GM group.

Bridges-Wilson Corp. has moved its executive, sales and engineering offices from 104 Hanover St., Boston, to 206 Massachusetts Ave., Arlington, Mass.

Emery Industries, Inc., Cincinnati, Ohio, have promoted Norman A. Ruston to general sales manager. Clifford W. Sampson, recently southeastern manager, located at Charlotte, N. C., will return to the home office in Cincinnati, Ohio, to become chemical sales manager.

Philco Storage Battery Division of Philco Corp. has moved into a larger plant of its own in Trenton, N. J. Early in 1942 the company will celebrate the 50th anniversary of its founding in 1892 as the Helios Electric Co. to manufacture storage batteries.

Clarage Fan Co., Kalamazoo, Mich., has appointed C. O. Fury (formerly in charge of Toledo office) to succeed D. B. Chapman in the Atlanta office. Mr. Chapman has become district office

ANOTHER DAY IS COMING

Perhaps it is already here—one thing that is certain about the future—The "good old days" are gone forever.

Business of the future will be done the hard way. Success will come to those who know how and do an even better job under more difficult conditions.

At SONOCO we view this situation with confidence. A hardening process will do us all good, and we accept this challenge of the future. We guarantee that SONOCO products and service will continue to *improve*.

SONOCO MAKES *EVERYTHING* IN *PAPER CARRIERS*

SONOCO PRODUCTS COMPANY

BRANTFORD ONT. HARTSVILLE S. C. MYSTIC CONN.

DEPENDABLE SOURCE OF SUPPLY

manager at Detroit, succeeding Harry R. Clarage who has been transferred to Kalamazoo as assistant to the general manager.

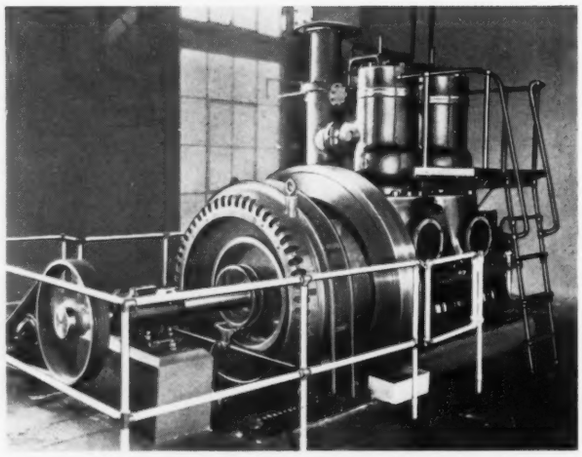
Hart Products Corp., New York, has formed a Canadian branch which will be known as the Hart Products Co. of Canada, Ltd., with headquarters at Guelph, Ontario. A fully-equipped plant and laboratories will serve the Canadian textile industry with a complete line of processing agents. The Canadian office will be in charge of Emanuel I. Birnbaum and Charles Humphrey. Mr. Humphrey was formerly with Onyx Oil & Chemical Co.

General Electric Co's Lamp Department, Nela Park, Cleveland, Ohio, made another substantial reduction affecting the list prices of G-E Mazda fluorescent lamps, effective Jan. 1. Price reductions affecting the most popular F (fluorescent) lamps in the G-E line, for example, include the following daylight and white types: 14-watt T-12 from 90¢ to 80¢; 40-watt T-12 from $1.35 to $1.15; and, 100-watt T-17 from $3.00 to $2.60.

Young Radiator Co., Racine, Wis.—F. M. Young, president and founder of the company, has been elected as honorary member of Alpha Chapter of Pi Tau Sigma, honorary mechanical fraternity.

Universal Salvage & Testing Co., New York, has acquired the services of Harry Levine, a former president of the A.A.T.T. The company was recently established by Arthur A. Lang.

TWO-FISTED WELDER—R. H. Oliver of St. Louis, Mo., sent the above photograph to A. F. Davis, vice-president of Lincoln Electric Co., Cleveland, Ohio. He is welding tractor rollers with both hands, according to his letter. The electrode he is manipulating with his right hand is receiving current from a 400-amp. portable welder and the one in his left hand is powered by a 150-amp. welder.



DIESEL GENERATING UNIT installed recently by Blue Line Hosiery Mills, Inc., Denver, Pa., has reduced power costs from $4,000 a year for purchased power to $1,350. Unit illustrated is a Fairbanks, Morse & Co. 150-h.p. diesel direct-connected to a 97-kw. generator which provides power for driving 22 full-fashioned knitting machines, a well pump, unit heaters, stokers, air compressors, humidifying equipment, and lighting. A 20-kw. unit has been installed to take care of a third shift and week-end service when it would not be economical to operate the large unit.

Packaging Institute, New York, has elected Joel Y. Lund, vice-president of Lambert Pharmacal Co., St. Louis, as president of the Institute. He succeeds George R. Webber, of Standard Brands, who died on Nov. 1, 1941.

General Electric Co. has appointed J. W. McNairy, who has been with the company for 24 years, as assistant manager of the Bridgeport (Conn.) Works of GE.

Hygrade Sylvania Corp., New York, has made what is called the world's biggest single fluorescent lamp installation in the new $47,000,000 Ford bomber plant near Ypsilanti, Mich. Approximately 156,000 Hygrade fluorescent lamps are being installed.

Lincoln Electric Co., Cleveland, Ohio, has selling prices on arc welding equipment now which are lower than they were two years ago, according to J. F. Lincoln, president of the company. Mr. Lincoln renewed the pledge of his company, originally made Oct. 2, 1939, not to increase prices.

Keystone Carbon Co., St. Mary's Pa., completed a large addition to its factory to be used for manufacture of brushes and porous bronze bearings. The company has laid the foundation for another plant addition to house new equipment for making negative temperature coefficient resistors.

Fedders Mfg. Co., Inc., Buffalo, N. Y., has appointed Clarence E. Scott as sales manager of its air-conditioning division. Mr. Scott was recently manager of radiation and unit-heater department of Warren Webster Co. He succeeds Edmund R. Walker who has been promoted to assistant general manager of Fedders Mfg. Co.

Farrel-Birmingham Co., Inc., Ansonia, Conn., announces the retirement of Lawrence K. Blackman, assistant treasurer located at Buffalo, N. Y. after 43 years of continuous service with the company.

Trundle Engineering Co., Cleveland, Ohio, has appointed L. W. Wallace, research and management engineer, as vice-president. Mr. Wallace was previously director of engineering and research of the Crane Co., Chicago.

P. L. Davidson, consulting engineer, has moved his office from 1600 Walnut Street, Philadelphia, Pa., to New Hope, Pa.

Fairbanks, Morse & Co. have been authorized by the Secretary of the Navy to spend $5,500,000 for a new building and additional equipment and machinery at the Beloit, Wis., works of the company. The purpose of this new plant is to triple the production of Fairbanks-Morse diesel engines for the United States Navy.

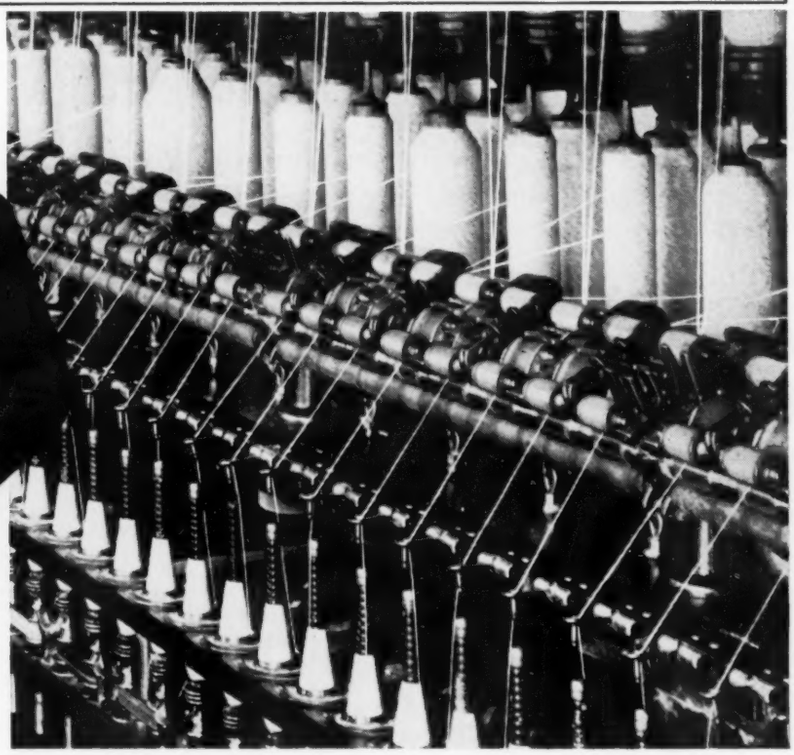
South Bend (Ind.) **Lathe Works** is sponsoring a series of 16 mm. sound motion picture films based on the book "How to Run a Lathe." Filmed in full color by Burton Holmes Films, Inc., at the South Bend plant, these pictures represent the most advanced technique for teaching lathe operation in industrial and vocational schools, universities, Army and Navy training stations.

Cochrane Corp., Philadelphia, has appointed Ralph J. Lundrigan to supervise the merchandising of the new Cochrane-Becker high-pressure condensate return system.

Chicago Pneumatic Tool Co., New York, has promoted Joseph A. Sullivan, assistant publicity manager to advertising manager, reporting to Leslie S. Gillette, sales development manager.

"YOU BET WE'RE HITTING PEAK PRODUCTION

. . . lucky we're on Armstrong's Cork Cots!"



HUNDREDS OF MILL OPERATORS are thanking their lucky stars that they are spinning on Armstrong's Cork Cots. For now the cry is for production . . . more and faster production! And the mills that are spinning on Armstrong's Seamless Cork Cots are the mills that are meeting this urgent demand. Today, 40% of the active spindles are equipped with these efficient Armstrong roll coverings!

Because of superior physical properties these cots assure maximum production of highest quality yarn—at the lowest cost. They reduce end breakage and top roll laps . . . eliminate eyebrows . . . cut down clearer waste. They produce a stronger, more uniform product because of cork's unusually high coefficient of friction and resultant better grip.

You save *three ways* when your rolls are equipped with Armstrong's Cork Cots. Assembly is quicker and therefore cheaper. Maintenance and replacement costs are lowered because of the remarkable toughness and durability of Armstrong's Cork. Besides, you can rebuff these cots three or four times, at a unit cost of a half a cent per roll!

Remember—there's more than just a quality product behind the remarkable production record of these cots. Armstrong is ready to help you iron out any problem you may have, to help you push your production to the utmost. Let us place the experience and knowledge of our sales, research, and engineering departments at your disposal. Get full details from your Armstrong representative or write today to Armstrong Cork Company, Textile Products Section, 927 Arch Street, Lancaster, Pennsylvania.

ARMSTRONG'S CORK COTS

ACCOTEX COTS (A) **ACCOTEX APRONS**

The company has also promoted E. R. Goss to branch manager of its El Paso, Texas, branch office, succeeding E. J. Coughlin, former manager of the branch, recently killed in an automobile accident.

American Society of Refrigerating Engineers, at its annual meeting in St. Louis, Mo., presented its distinguished service award to William S. Shipley, one of its past presidents, in recognition of his leadership and outstanding effort in developing and bringing into successful use the "York Plan," a cooperative plan for coordinating the community's civic and industrial activities in the interest of the National Defense Program. Mr. Shipley is chairman of the board of York Ice Machinery Corp., chairman of the Defense Committee of the Manufacturers Association of York, and chairman of Region No. 10 of the Pennsylvania Division of Contract Distribution, O.P.M.

Parks-Cramer in New Home

Move to plant of former Shirreffs Worsted Co. has permitted expansion of facilities

LAST APRIL the manufacturing buildings formerly occupied by Shirreffs Worsted Co. at Fitchburg, Mass., were purchased by Parks-Cramer Co., and the latter firm has subsequently moved its Fitchburg plant and its general offices into this new home. The move made possible expansion in facilities and reorganization of shop layout—a modernization program which sets the company's New England plant on a par with its southern branch at Charlotte, N. C.

One of the first steps was to transform the former weave room into a shop for manufacture of Parks Turbomatic humidifiers and many other items in the Parks line of industrial air-conditioning equipment. The room contains 20,000 sq. ft. of working area, and careful layouts have provided straight-line production methods. Welding, pipe bending, and other special operations are performed in adjoining rooms with an area of 10,000 sq. ft. These rooms are equipped with an overhead track and trolley system to handle materials.

The shop is lighted to a high intensity, with additional spot-lighting provided for close operations. A complete automatic sprinkler fire-protection system covers the entire manufacturing and storage areas. Machines are all driven by direct-connected motors installed on a wood floor, which was found to be in excellent condition and thoroughly capable of supporting the imposed loads. A saw-tooth skylight roof covers the shop, giving ample head room.

The offices, the engineering department, and the stock room occupy the two floors of a connecting building, containing approximately 35,000 sq. ft. of floor space. The stock room has been equipped with a series of bins and storage compartments and with a complete identification system which will facilitate the immediate shipment of any desired item. Over 6,000 items of material are stocked.

The engineering office on the second floor is roomy and well-lighted, with drafting boards, blue-print equipment, etc. Cabinet space is provided for every layout, and complete drawings are on file for every installation the company has made for the last twenty-odd years.

View of new Fitchburg plant and office of Parks-Cramer Co.

Careful study of present and future requirements resulted in a well-arranged office layout. Consultation rooms, three in number, are provided for the convenience of guests and customers. Executives' offices are constructed with walls and ceilings of a sound-absorbing material in attractive colors and trim, and with a resilient type of flooring.

The question of air conditioning throughout the entire plant presented no problem. Here the company takes its own medicine—and likes it. Two boilers in the original plant were inherited by the new owners, either one of which can carry the load. One has been equipped to burn oil; the other, a stand-by unit, is a coal burner. Well water at 50° F. and in sufficient quantity is available on the property. This makes it possible to maintain the inside temperature 10 to 15° F. below outside conditions in the summer and to control the relative humidity within 1% of the desired point. Dehumidification is effected when necessary, and the relative humidity is held between 40 and 50% the year round under automatic psychrometric control. The fan motor of the air washer is equipped with the latest patented four-speed control.

A thermostat in each office permits regulation of temperature for each area. At night, or during Sunday and holidays, the watchman throws a switch on the central control panel and sets the temperature of the entire plant from this one station. Individual offices, however, can still be regulated by means of a switch which is an integral part of the office thermostat.

For the convenience and comfort of the employees, locker and lunch rooms equipped with refrigeration and heating appliances have been provided for both men and women. The plant personnel has been increased to an all-time high.

This latest move marks another milestone in the steady growth of the company since the establishment of the original pipe shop by G. M. Parks in 1872. His partner in the venture was John H. Carpenter, who eventually sold his interest to Mr. Parks. In 1907, the company got into the air-conditioning business by acquisition of Turbo-Humidifier invented by A. W. Thompson. In 1918, the G. M. Parks Co. purchased the air-conditioning business of Stuart W. Cramer, of Charlotte, N. C., and the Parks-Cramer Co. was formed. Two of the three sons of the founder are still active in company affairs: R. L. Parks, chairman of the board of directors; and H. M. Parks, president. P. A. McKittrick is treasurer and general manager.

Splendid examples of U.S. uniform, specialized ~QUALITY~

Few realize the care that goes into **U.S.** manufacture

From the initial heat-treatment in the potentiometer-controlled furnaces to the final weighing, boxing and sealing . . . . at every step in their manufacture, U. S. Travelers are subject to the most modern scientific and rigid inspection and control to insure their quality and perfect uniformity.

To illustrate . . . . on each box there is stamped a number that is the key to a complete "case-history" of that particular lot or shipment. Reference to that number tells the whole story of those particular travelers, serving as a protection to the user and insuring perfect duplication even years later.

The fact that we are enlarging our plant some 15% is evidence that experienced textile men (who want smooth running, long wear, perfect lubrication and freedom from binding (know and appreciate the unexcelled quality and perfect uniformity of U. S. Travelers.

NE-BOW VERTICAL RING TRAVELER

Developed to meet the particular needs of the silk and rayon trade in the process of throwing, due to the recent adoption of the vertical ring, particularly of the lubricating type.
By eliminating the pivoting action of the traveler, the traveler is at all times kept in close contact with the groove or device for lubricating the ring and assists in drawing therefrom the lubricant, distributing the same evenly over the entire inner surface of the ring; promoting a longer life to the traveler and a more even twist.

Sold Under the Trade Names

Bowen Round Point Travelers
Bowen Square Point Travelers
Bowen Improved Vertical Bronze
Bowen Patented Bevel Edge
Bowen Flat Oval and Round Wire Travelers
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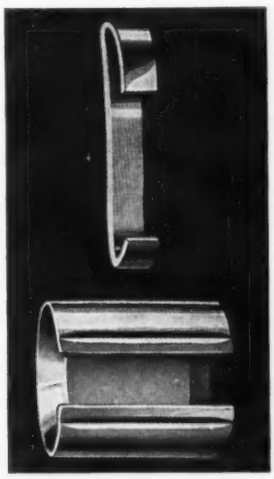
Bowen Patented Vertical Offset



BOWEN BEVEL EDGE TRAVELER

The Bowen Patented Bevel Edge Feature of U. S. Ring Travelers produces ideally smooth, even yarn. There are no angular edges to flatten the end. There are no split ends in throwing rayon and silks—no fly waste in the spinning and twisting of cotton, wool, worsted, asbestos, kindred fibres. Made and stocked in all sizes and weights, for all kinds and counts of yarns.

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A Traveler for Every Fibre

THIS IS NO. 31 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

ROLLER BAIL FOR NYLON AND RAYON WITH HOSIERY TWIST (No. 50 Winder)

Throwsters that have been coning silk hosiery yarns with the No. 50 Pineapple Cone Attachment find that the requirements of nylon and hosiery-twist rayon necessitate changes in their equipment. The fixed Bail (A in Fig. 1) which was satisfactory for silk, is not suitable for nylon and high-twist rayon. Throwsters that have changed over to the patented Pineapple Cone Attachment with Roller Bail (B in Fig. 2), have been able to get a minimum percentage of rewinds when winding direct from sizing tubes of nylon; the same equipment can be used advantageously for high-twist rayon yarns.

Fig. 1

The Roller Bail contacts the winding package and revolves in the same direction the yarn is traveling. Thus, in the case of nylon, there is no resistance on the part of the Bail to scrape off size — which will happen with a fixed Bail. In the case of high-twist rayon, the Roller Bail eliminates the danger of the twist being pushed back with a tendency to form kinks.

Pressure

Better package formation can be obtained when nylon is wound with more pressure. If a fixed bail were used, this additional pressure would increase the scuffing of the yarn. But with the Roller Bail, the pressure, in addition to improving package shape, also serves to keep the Bail revolving.

The pressure can be thrown out of adjustment by the setting of the Traverse Frame Dog, so it is important to have as little tension as possible on the Dog — just enough to hold it in the Segment. Should the operator, after tying a knot, fail to return the Traverse Frame Back so that the Roller Bail will contact the package, the machine's vibration will cause a loosely-set Dog to slip, returning the Roller Bail to the package surface. If the Dog grips the Segment, it will prevent this creeping of the Traverse Frame Back, and the Bail will not revolve until the package diameter increases.

The Traverse Frame Back may show a slight weaving motion at the start of winding, caused by the paper cone being of uneven thickness or the spindle not running absolutely true. But this weaving is not serious when the Roller Bail is used.

It is always best to use the Pressure Gauge when making adjustments on each winding spindle. With the gauge hooked into the top of the Traverse Frame Back, the pressure at the start of winding should be between 12 and 14 ounces; at the finish of the cone, it should be 4 to 6 ounces.

Tension

Knitters prefer a cone that is not too hard, so it is desirable to wind nylon with the minimum amount of tension. If a fixed Bail is used, excessive tension is created by the friction of the yarn dragging over the Bail. The Roller Bail eliminates this drag and will produce packages of the proper density for knitting.

When setting the tension, a Tensometer should be used on each spindle. 4 to 6 grams is enough at the start of winding, and *all* tension should be released at the finish except for 2 to 4 grams produced by frictional contact. If excessive tension is used, it may be difficult to remove the package from the winding spindle.

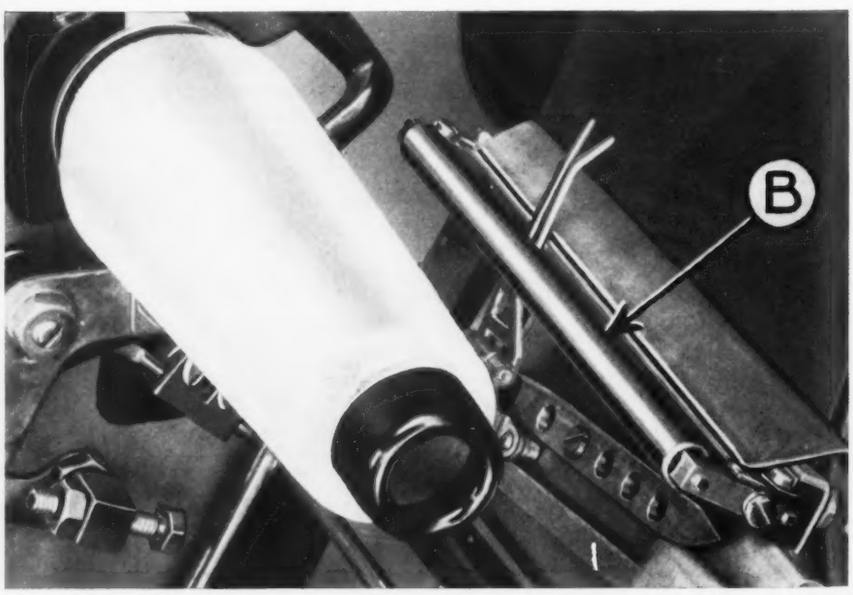

Fig. 2

See our Catalog in TEXTILE YEARBOOK

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UNIVERSAL WINDING COMPANY

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THE OVERSEERS' CORNER

VOLUNTEERING FOR CIVILIAN DEFENSE

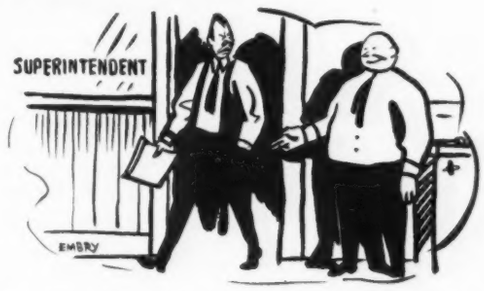
A PETE & BILL DISCUSSION

Bill was coming out of the superintendent's office as Pete approached. "Well, have you signed up yet for civilian defense?" asked Pete.

"No! and I'm not going to," growled Bill. "I don't see any sense in all this to-do about signing up to run around playing cops and robbers. I'm a working man, and I'm going to work and leave the fighting to the fighters."

"All I can say," replied Pete, "is that it is frequently necessary to fight for the things that give you your opportunity to work. I think that the civilian defense is a fine thing because it not only relieves the Army and Navy of a lot of work but it gives ordinary people a chance to feel that they are doing their share."

"Well, I'll do my share by running my job and taking care of myself, and a lot of other people would be better off if they'd do the same and stop all this parading around at night and watching for airplanes that never will come. How can working men play soldier all night and keep up their jobs?"



Bill was coming out of the superintendent's office

"Well," said Pete, "I'm going down this afternoon and sign up as an air-raid warden. Most of my first shift employees are going, too, to sign up for whatever they think they can do. We hope to be efficient and well-trained if an emergency arises."

"Yeah," replied Bill, "*if* an emergency arises. While you are losing sleep for *if*, I'm going to keep on getting my sleep."

"O.K., but I hope you end up with a place to sleep," shot Pete as he opened the door.

Should workers be encouraged to take part in civilian defense?

Letters from Readers

More Than One to the Family

"Family Arguments In The Mill"
Pete & Bill, November, 1941

Editor, Overseers' Corner:

There is room in almost every department for two or more members of one family to work if the proper method of management is exercised. As many as six members of one family have been worked successfully in one room by more than one overseer; but none of these kinsmen was in a key position. Yet when a death occurred in the family circle, the great task was to avoid a badly crippled department, with short production for a day or two.

Family fusses have no place within the mill, and feuding should not be tolerated between families, cliques, clans, church organizations, clubs, or other groups. If they do begin, the best discipline possible is to lay the whole crowd off for a day or two until there is a cooling off or a settlement wherein all ill feelings are soothed.

Some trivial action to convince all that such petty misunderstandings must be left at home usually alleviates any tension that might exist.

P.F.L.
(South Carolina)

Leave the Hatchet at Home

"Family Arguments In The Mill"
Pete & Bill, November, 1941

Editor, Overseers' Corner:

Well, you asked for it Pete & Bill! It doesn't make any difference if grandpa, grandma and all the grandchildren work on the same job if they know when and where to have their disagreements.

First, concerning family quarrels, the place for them is at home. If members of a family must get mad at each other, and even if they can't come to some understanding, why take it to the mill. There is nothing on the job to help settle the argument, surely not the overseer, who probably has troubles enough of his own but knows where to think about them. I will bet my last Alabama tax token that the folks who just have to fuss and make others miserable don't put that attitude in their gloves and take it to the movies with them. No! You bet your life they don't! They don't want to spoil their time of amusement.

Now, about the two sisters carrying on a feud. How about pitching them

CONTRIBUTIONS to the letters and practical helps in "The Overseers' Corner" are paid for when published without regard to length. We use letters (not over 200 words) discussing the material on this page or any other pertinent matter whether of mechanical, managerial or just plain human interest. Those who contribute practical helps or kinks which are published (not over 500 words) will be paid additional for an appropriate sketch to illustrate their device. It is not necessary to submit finished drawings. Contributions of greater than specified length may be given consideration as articles. If these pages interest you —contribute something to them to interest others. Address Editor, Overseers' Corner, Textile World, 330 West 42nd St., New York.

out the window until they kiss and make up? There isn't any use in an overseer trying to put a stop to something which does not concern the job; when people fuss about something not concerning the job he should tell them to settle it outside the mill. Peace makers only get the tough end of a family quarrel, as blood is thicker than water.

A good policy for any employee to adopt is kindness and consideration for all co-workers as far as the job is concerned; but let outside conversation wait on the outside. Then if it is important enough to take up again, fine and good, but don't take the company's time with personal problems.

As I said in the beginning it doesn't matter how many of a tribe are in the same department if they leave the hatchet at home, and bring the pipe of peace to work with them.

MARTHA B. PITTENGER
(Alexander City, Alabama)

* * *

Fabrics for Military Use

(*Continued from page* 59)

A 6-OZ. COTTON TWILL for Army shirts is a new fabric which will be required in large quantities by the Philadelphia Quartermaster Depot. This fabric is described in a recent tentative specification P.Q.D.95 as: Cloth, cotton, twill, 6 oz. It is to be furnished in one type and in one grade, "Firsts."

Yarn—The cotton used in the manufacture of the yarn shall be thoroughly cleaned, well combed, drawn, and evenly spun into a single yarn for both warp and filling. Two-ply yarns will be acceptable.

Color—The cloth shall match an approved sample and shall be evenly dyed with vat dyes.

Physical Requirements — Maximum weight per sq.yd.: 6.2 oz.; minimum yarn count per in.: warp, 114; filling: 54; breaking strength: warp, 110 lb.; filling, 45 lb.

Width—Width, exclusive of selvage, shall be not less than 35½ in.

Weave—The weave shall be a four-harness twill to the right, three up and one down.

Finish—The cloth shall be closely singed, fully mercerized, preshrunk, and practically free from sizing.

Length—Unless otherwise specified in invitation for bids, the cloth shall be in one continuous piece of not less than 50 yd.

[Not given in the specification are the following suggestions for approximate gray construction and yarns: 40 in., 108x56, 2.35 twill; warp 20/1 combed; filling, 25/1 combed.]

Overseers' Practical Helps

Driving Out Tight Shaft Keys

When removing heavy gears that have been forced into place, especially such ones as the crankshaft or bottom driveshaft gears on looms, the task will be eased if the key is first driven out before attempting to remove the gear. Even though a gear puller is used, it is often a difficult job to remove a tight gear without breaking some part connected with the drive.

The method described below is one of the handiest ever tried by the writer. After all the drive-motion parts have been removed from the crankshaft, with the exception of the gear, the inside bearing cap is moved away or removed. The crank is then turned so the keyway is on top center.

Now, lower the shafts so all are down, then lay a clean sheet of paper or cloth over the warp ends near the drive side, to protect them from dirt, grease, and possible breakage. After this has been done, cut short lengths of key stock, each approximately ½ in. long, from smaller-size stock than that which is holding the gear on. The job is now ready to be tackled.

Using a short, heavy punch, drive the exposed end of the seated key outward through the keyway. The heavy end of the punch will prevent it going into the gear and shaft key-slot more than about ½ in. When this point is reached, place a short length of the cut key stock into the slot, and drive this as far as it will go. Repeat with additional short lengths of key stock until the key has been driven through. When the key is out, it is an easy matter to push out the smaller-size, short lengths of key stock with a piece of wire.

With the key removed, it now becomes a much easier task to remove the gear. A gear puller facilitates the task. The same general method can of course be used for gears on a wide variety of machines. —H.E.W. (*Penna.*)

Cleaning Oil From V-Belts

On some types of warping and other textile machinery, small-size V-belts are used for minor drives. At times, these belts become oily or encrusted with gum from processing oils. The oily belt loses power, allowing slippage. The gummed belt often becomes so sticky that the drive is erratic and gives trouble. Cleaning can be done while belt is running.

Cut a 1-ft. length off an old broom handle. Wrap several wraps of coarse sandpaper around half the length. Fasten the paper, to prevent unrolling, by tacking each end. Hold the sandpaper end against the moving belt, first on one side, then the other. In a few seconds, the belt will be cleaned. Should the sandpaper become crusted with gum, slice off the exposed section, bringing an underneath layer into use.

On drives exposed to sizing compounds, it may be necessary to clean encrusted gum from V-pulleys. This can be done in a similar manner, with the aid of sandpaper pressed about a small V-file. Where gum is severe and hardened, the file itself can be touched against the pulley surface not covered by the belt, when the drive is running. After the job is done, the file can be cleaned with the usual cleaning fluid.

—O.L.P. (*Penna.*)

Carding and Spinning Problems

Discussed at Auburn meeting of Alabama Textile Operating Executives

CARDING AND SPINNING PROBLEMS were discussed at the fall meeting of the Alabama Textile Operating Executives held recently at Auburn, Ala.; F. K. Petrea, Samoset Cotton Mills, Talladega, Ala., general chairman of the group, presided, and discussions were lead by Harold C. Clark, Avondale Mills, Sylacauga, Ala., and A. H. Randall, Alabama Mills, Inc., Birmingham, Ala. J. E. Hannum, assistant dean of engineering at Alabama Polytechnic Institute, Auburn, Ala., welcomed the association and described briefly the adult defense training program sponsored by the Government and carried out by the engineering schools of the country. Dean Hannum stated that there is now a night school located in every defense manufacturing center in Alabama: the latest such school is one in textiles, located at Auburn, with an enrollment of about 250 students. Before start of the discussion, G. H. Dunlap, director of research for the STA and the Arkwrights; and John T.

Wigington, director of research for the Cotton-Textile Institute, were introduced and each gave a brief description of his program.

The carding discussion, led by Mr. Clark, opened with a discussion of the causes of "wind" rolls, or folds, in picker laps. Opinion of the members was that causes could be binding of the lap pins, or crooked pins, dry rollers in the pressure heads, and improper drafts and fan speeds. Split laps, said the members, can be prevented by correct drafts and fan speeds in the finisher sections of pickers, proper tension on laps between calender and lap rolls on pickers, proper humidity in picker and card rooms, use of finger bars above and below laps behind calender rolls, and by uniform blending-in of waste where waste is reworked.

It was decided that when the production of a card is decreased from, for example, 12 to 8 lb. per hr., it would defeat the purpose of the change to decrease the speed of the licker-in; it was assumed that the change was made to obtain greater cleanliness. Likewise, it was stated that a change of ¼ in. in staple length would necessitate no change in cylinder speed; in connection with this, several members reported that they obtain a cleaner sliver from shorter staples, the speeds remaining the same.

Cleaning schedules of steel rolls on drawing frames, as reported, indicated that most members do such cleaning approximately once a month, but one member stated that his rolls are cleaned weekly; the consensus was that cleanliness of cotton and amount of oil added at pickers affect the cleaning schedule.

Variation in weight of flat strips from one card to another with the same settings and running the same cotton was thought by those present to be caused primarily by differences in age and condition of clothing on cylinders and flats; other possible causes enumerated were bowed stripping plates, worn flat chains, and differences in condition of licker-in.

H. B. Bergfeld, Bemis Bros. Bag Co., and R. O. Roberts, Lincoln Mills of Ala.

IN THE SPINNING DISCUSSION led by Mr. Randall, the first question brought forth the general opinion that bias-cut long-draft aprons should be installed when frames are overhauled, and that many of the aprons thus removed can be put in place of those which later require replacement. Several men advocated installation of bias-cut aprons when frames are overhauled and straight-cut aprons as replacements; one of these men advocated a quick-drying glue which requires no heating, eliminates the use of clamps, and allows the end to be put up within 2 min.

Bolsters should be oiled when 20 to 25% of the oil has been used, stated one member who continued by saying that in his mill tests had shown that this required approximately two weeks; bolsters in other mills operating under different conditions and on other yarns, he stated, probably would consume that percentage of oil in a different length of time. Oiling of top rolls on long-draft spinning, no wicks, should be done every 8 to 48 hr. for front and middle rolls, and every 64 to 120 hr. for back rolls, depending upon roll speeds.

A. H. Randall, of Alabama Mills, Inc., leading the spinning discussion

As a method of training spinners, several members described the system of putting learners with an experienced spinner who teaches the necessary operations; one man present stated that his mill taught spinning in a separate building outside the mill. It was agreed that the time required to teach a competent spinner is 8 to 12 weeks.

Regarding the advantages and disadvantages of light-weight spinning tapes, one member stated that such tapes effect a saving of 2 hp. on an 8-frame group, which should be sufficient to offset any and all disadvantages. Another spinner stated that his cost per yard of light-weight tape, considering actual cost and running time, is about half that for heavy tapes when spinning an 8-oz. package. One mill man described a method of sewing tapes which, although he had not tried it, is said to hold together two or three times longer than joints sewn by other methods.

F. K. Petrea, Samoset Cotton Mills, Talladega, Ala., general chairman of the association

Cleaning and polishing of rings and ring rails can be accomplished satisfactorily by dipping rails and rings in a trough containing boiling lye solution, stated several members; this will remove all grease and gum, will not warp the rail, but will increase traveler wear for a short time.

New members elected to the executive committee of the association were: T. H. Floyd, Tallassee (Ala.) Mills and Robert Reardon, West Point Mfg. Co.

Left to right: John Wigington, H. H. Willis, Ivar Moberg, and Ben H. Crawford, secretary of A.T.O.E. Ivar Moberg has long been a contributor to TEXTILE WORLD, and at present is writing the cotton section of "Loomfixers' Manual"

Salvage of Textile Machinery

And carding-spinning problems discussed at South Carolina STA meeting

CARDING AND SPINNING problems and reclamation of textile machinery were discussed at the fall meeting of the South Carolina Division of the Southern Textile Association, held at Clemson, S. C. W. W. Splawn of Kendall Mills, Pelzer, S. C., chairman of the division, presided, and a welcome was extended by Dr. Robert Poole, president of Clemson College. Speakers of the occasion were Circuit Judge J. Strom Thurmond, who spoke on "Things Worth Fighting For," and J. C. Cunningham, staff engineer of Kendall Mills, Paw Creek, N. C., whose topic was "Salvaging of Repair Parts and Supplies."

Mr. Cunningham, in beginning his talk, asked the question, "Why salvage anything?" He answered his question by saying that a machine part must be capable of being satisfactorily reclaimed before it should be considered. "We often patch something or salvage something which is actually not worth the expense, time, effort, and care that we put into it," he said. "There are four questions that you might well ask yourselves at this point, as to why and when you should remove parts from the machines. Your first and perhaps main reason is one of operating economy. Second, you are concerned with maintaining a given quality of lap, sliver, roving, or yarn. Third, you desire to maintain a given production bogey. Fourth, you desire to achieve all three afore-mentioned objectives and, at the same time, satisfy the employees who run the respective machines involved.

J. C. Cunningham (left) throws further light upon one of the points of his talk

This last point is not the least by any means in your consideration, and in these days it is rapidly increasing in importance and real value to the mills. . . . . the last three objectives can be completely met [by use of new replacement parts and without any salvage], and it is only the first objective that need worry you."

Mr. Cunningham stated further that in his opinion curtailment of cast-iron parts will be slight, if at all, and that salvage of such parts will continue on the same national basis as in peace time.

On the point of economy of operation and salvaging of parts, he said, ". . . . . make sure that you take the part off the machine at a time when it is still possible to salvage it or restore its worn surfaces to a reasonable standard, fit for further use."

In considering salvage in its broader aspects, Mr. Cunningham suggested that the mechanical department be asked the following questions: Can the part be satisfactorily repaired; by what means; will the wearing surfaces be equal or better than those of a new part; what is estimate of salvage cost on a predetermined job lot; what is cost of a new part; what is percentage saving by salvage?

G. H. Dunlap, director of the research program being carried out under sponsorship of the Textile Foundation by the STA and the Arkwrights, discussed several completed tests on cards. He quoted the following results obtained when two mills increased cylinder speeds: one mill increasing cylinder speed from 172 to 196 r.p.m. had an increase in skein strength of yarn from 61 to 64 lb., and the increase was borne out by single-strand tests; the other mill, increasing cylinder speed from 165 to 192 r.p.m., also experienced an increased yarn strength. Comparative production figures in the two mills he gave as follows: 10.2 lb. at 172 r.p.m. and 11.69 lb. at 196 r.p.m., 9.92 lb. at 165 r.p.m. and 11.84 lb. at 192 r.p.m. Waste percentages at the increased speeds were the same as before and the cottons the same.

Carding and spinning discussion was led by Frank D. Lockman, superintendent of Monarch Mills, Lockhart, S. C. The first question, "How do you introduce your new employees to their work?" was answered as follows: "I think when an employee comes in we should introduce him to the second hand in the place where he is going to work. We should have the job laid out and go over it with him—and not be in a hurry. . . . . and if there is a difficulty tell him, 'Here is something we have had trouble with. If you cannot handle it, take it up with your second hand. If you don't get satisfaction come to me.'"

E. H. Kemp, and Wallace Splawn at Clemson meeting

Another answer to the same question was as follows: ". . . . . a new employee is usually interviewed by the superintendent. . . . . it is a good policy for the overseer and superintendent to talk with him and let him know that he is expected to run his job, but also that you are glad he is at work with you. It is a good plan for the second hand to introduce him to the operatives on his job on the preceding and succeeding shifts, and also to the operatives on each side of him. We also tell him the exact time and day when he will be paid off."

The question, "What improvement, if any, have you derived from the installment of a blending reserve system on pickers?" was answered by Mr. Dunlap. He stated that of two 47-yd. laps run with blending reserves, 46 and 43 yd., respectively, were within tolerances when tested on a Saco-Lowell lap meter; of two similar laps run without the reserve, only 24 and 30 yd., respectively, were within limits; tolerances were plus or minus 0.15 oz. per yd.

On the question of relative humidity best suited to long-draft roving frames, the general opinion was that the percentage must be reduced below that allowable on conventional-draft frames; 55% was quoted by one member as correct for long-draft frames.

Discussing methods of gaging and inspecting new bobbins and quills, a member stated that all his new quills are tested not only for size, but also are tested for balance on a vibrometer. Percentage of rejects reported ranged from 1.6 to 5.3%.

QUESTIONS & ANSWERS

Knitting Needles are Rough

Technical Editor:

We are inclosing several needles. On passing your fingernail over them, you will notice that they are very rough. The roughness is due to gum that sticks to them from the silk. We have several thousand of these needles lying around in stock that we would like to use again, but find it impossible because of the holes and streaks they leave in the hosiery. We should like to know if there is some solution that will restore them to a perfect condition to be used again without having to put them on the machine to clean them. (8830)

Microscopic examination of the needles shows the following conditions:

Needle 1. Stem mark., bad reducing burrs below eye; can be refinished by maker.

Needle 2. Stem mark::, bad reducing burrs below eye; used; beard half gone; discard.

Needle 3. Stem mark:::, medium finish; ought to be refinished.

Needle 4. Stem mark:::, good finish.

In view of the above we recommend picking out the used needles and having the rest refinished, which would take off the gum. Presumably, you have tried kerosene and gasolene. While caustic soda will destroy the gum as it does on sinkers, it would be necessary to remove every trace of it from the eye of the needle, which might be impossible. Use of a good needle oil when the machines are shut down usually prevents the gum from accumulating, and cheap cotton yarn and a fairly tight stitch is best for removing oil or gum in the machine.

Removing Stains from Dye Kettles

Technical Editor:

We will appreciate it if you can give us some information regarding removal of surface stains from stainless-steel dye kettles. The inside surface over a period of six months has gradually become a dark brown color, although it has been continually wiped down with a cloth and soapy water. So far we have been unable to remove it by boiling out the kettle with chemicals, and removal by mechanical means might do harm to the metal.

The stain may be the result of continually boiling water in it, such as is necessary for wool dyeing. We will be much obliged if you can supply us with a list of the methods that are practicable and harmless for cleaning stainless steel. With such information we will be able to choose one suited to our conditions. (8828)

The stain is most likely a sulphur stain from the wool. Usually, it can be removed by boiling the kettle with 1 gal. muriatic acid per each 500 gal. of water. Such a procedure will not harm the kettle. A second suggested method is to use a fine abrasive such as 00 emery cloth, or some household cleanser. This second means will require more time and labor but will probably produce better results. Still another method is to boil the box with sodium hydrosulphite, soda ash, and a fatty alcohol: 10–10–5 lb. per 1,000 gal.

In any case if the stain does not transfer itself to the material being dyed, it might be best to disregard it.

Weaving Velour

Technical Editor:

Can you give us any information regarding the proper method of drawing in warps for rayon and cotton jacquard velours as per sample inclosed? What we would like to know is where the backing yarn, pile yarn, and pile gages are placed in each reed dent, and in the harnesses. (8810)

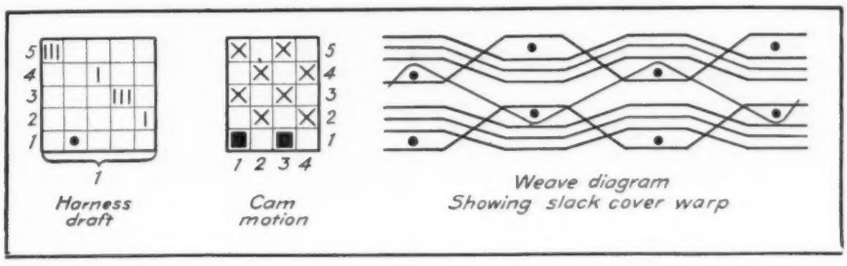
There are two methods of drawing in work of this type. In one instance, waste yarn is drawn into the harnesses, then the actual warps are twisted on at the loom. However, if the mill has drawing-in frames which are satisfactory for holding the beams, the beams can be positioned for drawing in just as they will be placed in the loom. In the case of the fabric submitted, the sample was not long enough to determine whether the covering warp was weaving slacker than the ground warp. All ends in both warps, when removed from the sample, showed the same length. If this is actually the case, only one beam would be required, because all ends interlace the same. In our opinion, a better cloth would result if a slack cover warp were used.

The beams should be in the loom as follows: cover for bottom cloth, ground warp, cover for top cloth. If beaming, two leases should be made, one at each end of the warp. This will facilitate twisting on fresh warps. In drawing in, the pile ends should be drawn as near the cover warp as possible. The object of this is of course to get the pile ends well covered on the back of the cloth. If this is not done, the cloth will show high and low pile. One might have to try several draws to get the pile properly covered.

The warps can be drawn through the harnesses without the pile, in accordance with the accompanying harness draft, and with each warp end in a separate heddle. In this cloth all ends must be in one dent because a coarse reed has to be used to give the pile plenty of space to pass the gage wires. If two or more colors of pile, or two different kinds of yarns are used, and these yarns show in the cloth all over, then two pile ends will be in same dent. If the pile ends are weaving in a straight line, they could be arranged in pattern form in the pile creel, one per dent.

After drawing in, the warps are placed in the loom. Next, pick a lease in the jacquard harness from the comber board, following exactly the pile pattern. Now the warp ends are put in place, and drawn through the reed. When this is done, all the warp ends are tied to the pin-rollers. In jacquard fabrics of this type, pile ends usually are run from a creel at the back of the loom. All the pile ends should be picked into a lease then drawn into the jacquard harness. The pile ends can be drawn through the reed and tied to the warp ends on the pin rollers. It might also be wise to have a false reed at the back of the loom, to guide the pile ends in a straight line in the loom.

For jacquard fabrics made on plush looms, the pile-wire gages are stationary and attached to a wooden shaft in the rear of the harness, from which point they extend through the harness and the reed into the cloth. Due to the length and flat construction of pile gages, specially made stabilator heddles are used to support them. These heddles are placed directly in front of the harnesses. They are stationary at all times. Some mills use only one gage wire to every other reed dent. To avoid buckling of gage wires, stabilator heddles should have eyes suited to the shape of the gage wires. The wires must be placed in the center, and free from the knife motion, if any.



COTTON SECTION—Chapter XVII—Continued

By IVAR MOBERG

Shuttles

THE SUBJECT OF SHUTTLES was taken up in the November issue, and continued in the December installment. That installment ended with a discussion of methods of confining filling ballooning to the insides of shuttles, and suggested use of bristles as satisfactory in most instances. If bristles are not put in by the shuttle makers, the loomfixer should proceed as follows:

Place an empty bobbin in the shuttle and mark the extreme bobbin tip on the outside of the front and back walls of the shuttle. Approximately 1½ in. farther in from these marks drill a ⅛-in. hole on the front wall, central with top of bobbin, and another on the back wall, central with bottom of bobbin. This is for Z-twist filling; for S-twist yarn the location of the holes should be exactly opposite.

In drilling these holes, start the drill at a 90° angle to the shuttle, then as soon as the drill point has located itself, tilt the drill to approximately a 45° angle, aiming the drill to cut through the bobbin about ⅜ in. from bobbin tip and tangent with either top or bottom of the bobbin, depending on whether front or back hole is being drilled. Figs. C102 (reprinted above) and C104 illustrate this.

Wind a fine thread tightly around a bunch of bristles to hold them together and insert the bunch in one of the holes just drilled. With the shuttle clamped in a vise to prevent splitting, drive a pointed wooden peg, dipped in glue, through the center of the bristles, to hold them in the hole. Using a wooden peg without glue is not satisfactory, as vibration of the shuttle in operation will soon loosen the peg and let bristles fall out. So trim the bristles with scissors that they do not extend beyond the bobbin. When bristles are too long, filling yarn has a tendency to loop around the bristles. This causes filling breakages and increases loom stops.

Another method of confining ballooning and adding tension is shown in Fig. C105. Rabbit or sheep skin, plush or flannel can be used. They rank in approximately the order given. Shallow grooves should be cut in the shuttle walls and the fabric or skin glued into position. Tacking should be avoided as it is likely to form protrusions on which filling will catch.

On referring again to Fig. C102, it will be noted there is a space between the heel spring and extreme end of butt or bobbin. It is important that a clearance of $\frac{1}{64}$ in. to $\frac{1}{32}$ in. be maintained at this point; otherwise difficulty may be experienced in making the spring clip properly take all three rings at the transfer. On shuttles used with Crompton & Knowles automatic looms, thread grooves should be below the feeler slot, or approximately $\frac{2}{3}$ of the way down on the shuttle. The reason for this is that on these looms the feeler is on the right-hand side of the loom, and it is advisable to have the filling below the contact of the feeler, which otherwise might cause filling breakage.

A recently developed shuttle has the thread groove at the bottom. The object of this is to prevent filling from dropping below the thread groove and becoming pinched between shuttle and box front.

Shuttle rules for loomfixers:

1. Do not remove the protecting coat of varnish before putting shuttles in looms.
2. Tighten screws in eye, spring clip, and heel spring.
3. Check to see that bobbins are held firmly and central in the shuttle by the spring clip. Turn bobbin around once, clipping it on each quarter turn, to show up crooked rings on bobbin.
4. Do not enlarge feeler- or Stafford-cutter slots. If they do not line up, it is because feeler and/or Stafford cutter are not properly positioned.
5. Do no cutting and/or filling of new shuttles ordered specifically for the type of loom in question—and all shuttles should be ordered specifically.

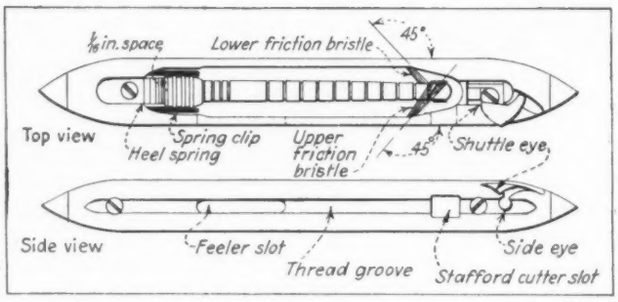


Fig. C102. Top and side views of Draper shuttle with cast-iron eye (repeated from earlier issue for readers' convenience)

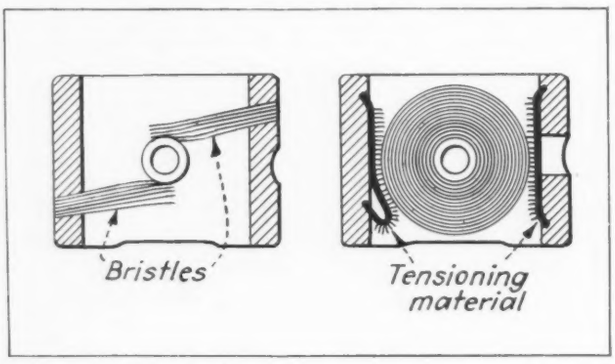


Fig. C104 (left). Confining filling ballooning by means of bristles. Fig. C105 (right). Confining filling ballooning by means of rabbit or sheep skin, flannel or plush

6. All shuttles in each box loom must be exactly the same size and weight. For 4x1 box looms, shuttles should be ordered in sets of four, of equal weight and size.

7. Before starting looms with new shuttles, make certain the hole in the old picker centers perfectly upon the spurs of the new shuttles. If it does not, replace pickers.

8. After a few minutes' run, new shuttles should be checked for excessive wear at any point, and the cause, if any, removed.

9. After 2 to 3 hours run, carefully examine shuttles for excessive wear and/or bruises. If any appear, remedy faulty loom conditions causing them.

10. Check screws in eye, spring clip, and heel spring for tightness.

11. Check to make sure screws in eye and spring clip do not extend through their respective nuts. Many reeds have been ruined due to this condition.

12. Interchange weekly shuttles in box-loom sets, to insure even wear on all shuttles.

13. Check shuttle tension, preferably on an almost empty bobbin. Steady drag on filling indicates satisfactory tension. Filling running out in jerks indicates improper tension, and may cause kinky filling in the cloth.

RAYON & SILK SECTION—Chapter V (Continued) and Chapter VI

By H. E. WENRICH

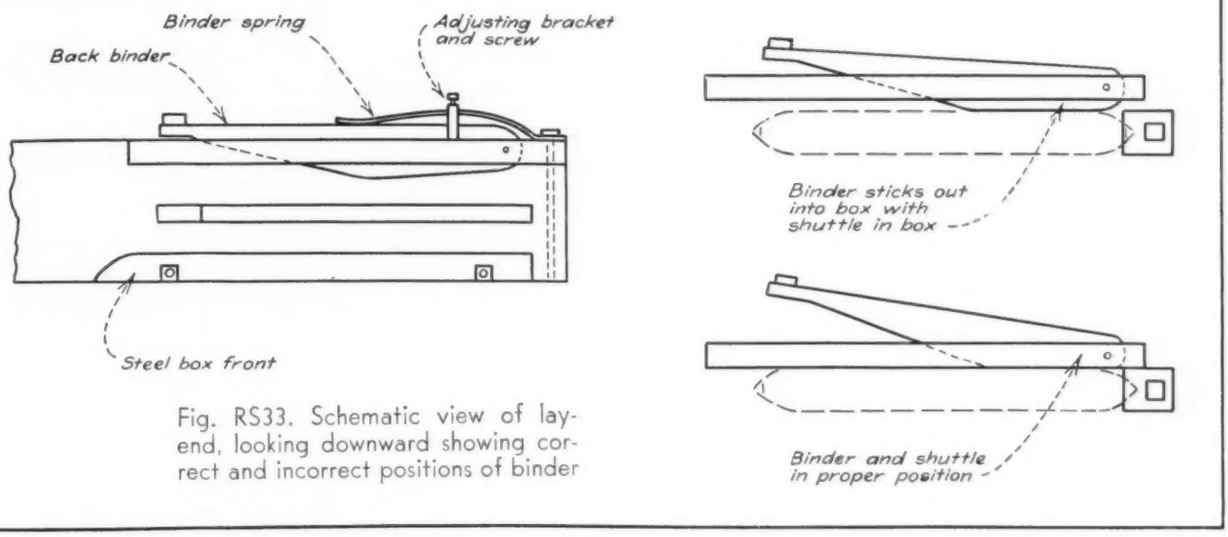

Binder spring
Adjusting bracket and screw
Back binder
Steel box front
Binder sticks out into box with shuttle in box
Binder and shuttle in proper position

Fig. RS33. Schematic view of layend, looking downward showing correct and incorrect positions of binder

The Lay Motion

REPAIR AND ADJUSTMENT of back box-binders was the subject of a discussion begun in the October issue. The discussion is continued below. Fig. RS33, top, is a schematic view of the layend, looking downward. The binder is tensioned by the binder spring, which holds the shuttle in the box after is has been correctly checked. The binder spring itself is given the necessary tension by means of the adjusting bracket and screw shown. The position of the back binder shown is correct for when the box is empty.

This layend is equipped with a steel box front, such as is found on many looms. When filling is being cut on looms using this type of box front, a leather or canvas strip so placed in front of the box front that incoming shuttles will face this leather surface, will often remedy this type of trouble.

Many loomfixers, after attaching new binders, do not make a careful check to make sure they are correctly fitted. The top guide should be removed when attaching new or reconditioned binders. If the binder sticks out into the box after the shuttle is put in place, as in RS33, top right, the binder must be removed and this excess material cut away. If this is not done, the backs of the shuttles are likely to be burnt the width of the binder. This will quickly ruin an expensive set of shuttles. In order to determine accurately what material to cut away, first pull out on the point of the binder at the protector-rod arm. Then ascertain whether the protector dagger has sufficient clearance. If no adjustment is required, draw a pencil line along the binder flush with the box back. This will indicate the excess material which should be cut away, so that when the binder is readjusted the shuttle will fit into the box properly.

The correct position of seated shuttle in relation to back binder is shown in the bottom portion of Fig. RS33.

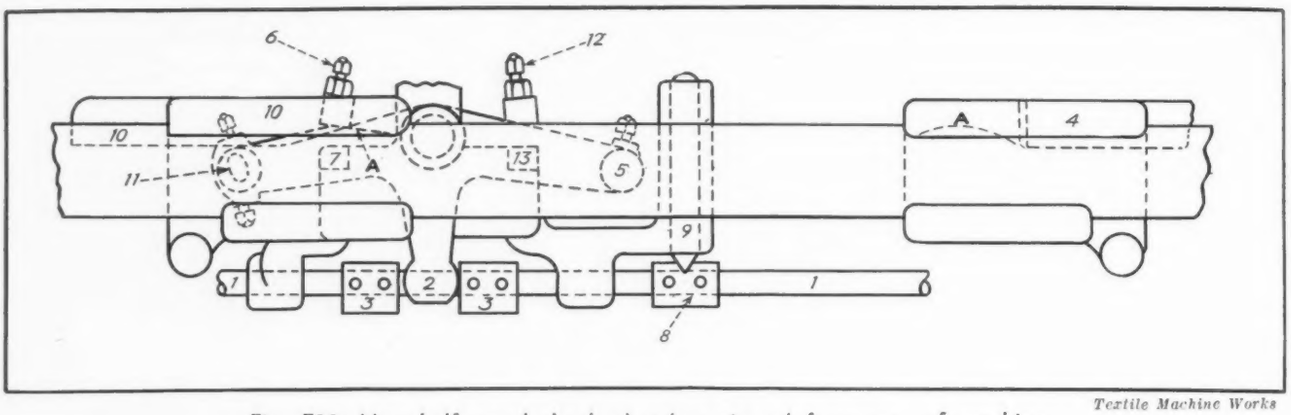
On plain-side shuttle boxes making use of front binders, where rawhide pickers and spindles are used, the same procedure can be followed as for box-side fixes. Where plain-side leather pickers are used, the suggestions just described apply.

When the leather picker binds after the pick has been made from the plain side, examine picker and stick while holding the stick in the front end of the shuttle box. Should the leather picker be extra large, it can be ground down slightly at the point of binding. If the picker fits too tightly on the stick, either file out inside the slot if it is too small, or grind the stick down on the emery wheel. Pickers must not bind.

FIXING HOSIERY MACHINES

FULL-FASHIONED MACHINES—Chapter XII (cont'd) The Carrier Motion

By WALTER A. SIMOND



Textile Machine Works

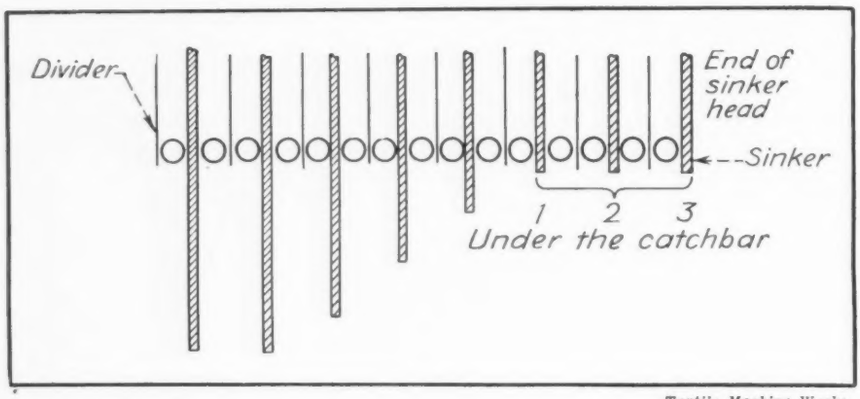
Fig. F29. New half-speed shock absorber viewed from rear of machine

SHOCK ABSORBERS must be set correctly to prevent rebounding of the carrier rods and bad selvages. Half-speed shock absorbers of the older type for Reading machines should be adjusted as follows: Lock the three-carrier friction box on the friction shaft with the lever engaging the main carrier rod; coulier the machine until the carriers are ⅞ in. from the end of the stroke on full width of knitting; and then move the shock absorber dog on the ½ in. shock absorber rod against the hinge lever of the three-carrier friction box and fasten it. Move the plain shock absorber friction box and engage it with the main carrier; move its shock absorber dog against the hinge lever and fasten it to the shock absorber rod. Set the shock absorber dogs on the opposite side in the same manner.

The tension on the heavy loaded spring plunger should be adjusted so the plunger will be lifted approximately ⅛ in. when the hinge lever of the friction box strikes the dog on the half speed rod.

If the plunger itself is forced out of its V notch, it sometimes indicates that the friction on the carrier box is too heavy or that the carrier speed is not sufficiently checked. Collars on the ½ in. shock absorber rod should be set so they will just clear the bearing brackets at the extreme end of each stroke for the purpose of returning the shock absorber rod to its normal position when it becomes displaced.

Half-speed shock absorbers of the newer type should be set or adjusted according to the following instructions quoted from Textile Machine Works Erector's Bulletin, Supplement K:



Textile Machine Works

Fig. F30. In making final setting of new-type half-speed shock absorber, coulier the machine until all except last three sinkers are pushed out

Initial Setting:

"1. Coulier the machine until the half-speed shock absorber bracket is in its central position and see that the ½ in. rod, 1, (Fig. F29) is properly positioned to allow equal travel on either side of this point.

"2. With the lower part of cam-lever 2 in a vertical position, place the collars 3 against the rounded section of the lever and tighten in position, allowing the cam-lever to swivel freely.

"3. Slide the left cam 4 over the fixed roller 5 of cam-lever 2 until the roller is in the low section of the cam (point *A*). Now set adjusting screw 6 so that there will be from 0.002 to 0.003 in. clearance between the screw and pad 7 of the plunger bracket.

"4. Continue to move left cam 4 over fixed roller 5 of cam-lever 2 until the roller rests on the high surface of the cam. With the roller in this position, tighten collar 8 on the ½ in. shock absorber rod with plunger 9 in the V-notch of the collar as shown in Fig. F29.

"5. Move the right cam 10 over the adjustable roller 11 and adjust roller 11 in the spline-milled slot of the cam-lever so that it rests on the high surface of cam 10.

"6. Place the low point *A* of right cam 10 over roller 11 of the cam-lever and bring roller 11 in contact with the cam at this point by forcing plunger 9 out of the V-notch of collar 8. Now set adjusting screw 12 so there will be

0.002 to 0.003 in. clearance between the screw and pad 13 of the plunger bracket."

Final Setting:

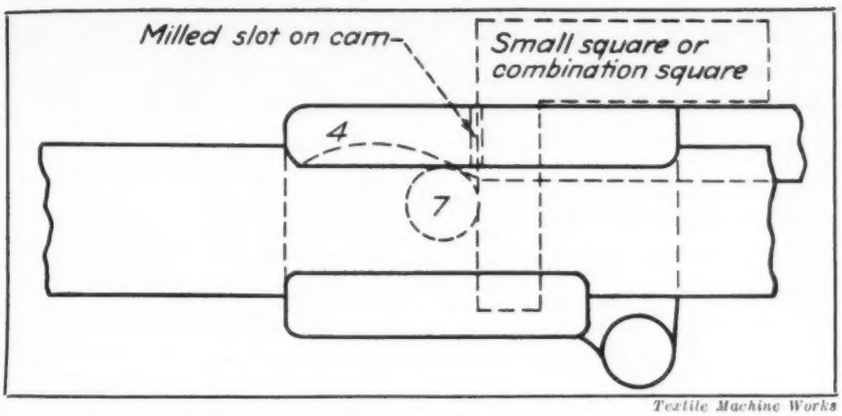
"1. Rack the carrier nuts out to allow full travel of the carriers, this must be done on both narrowing heads.

"2. Lock the alternating three-carrier friction box on the friction shaft with the lever engaging carrier rod 1.

"3. Coulier the machine until the carrier rod has hit its end stop; continue couliering until all except the last three sinkers are being pushed out as shown in Fig. F30.

"4. Engage the plain shock absorber friction box with its carrier rod and push the rod against the carrier rod end stop so all shock absorbers can be set at one time.

"5. With the machine in this position, push the cam slide 4 Fig. F31 against roller 7 until the edge of the roller is flush with the center of the milled slot in the cam. This can best be done by the use of a combination square as shown in the sketch. After the cam slide is in the proper position, tighten the collars on the connecting lever at the narrowing head.



Textile Machine Works

Fig. F31. Position of machine (viewed from rear) for setting cam slide

"6. Set the shock absorber dog against the hinge lever of the shock absorber friction box (also alternating three-carrier box) and tighten on the half-speed shock absorbed rod.

"Repeat the above procedure for the opposite side."

CIRCULAR MACHINES—Chapter XIII (Continued) Make-Up Mechanism

By JULIAN W. HUGHES

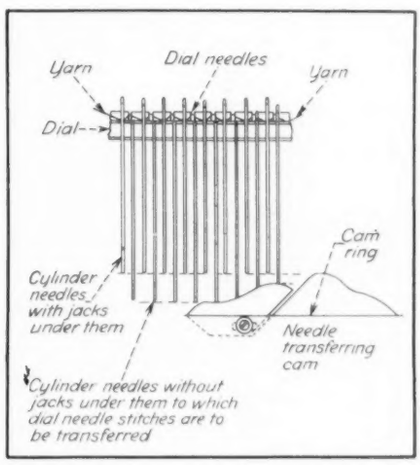
MAKE-UP on the Model HH machine involves the same principle as that of the Model K. The dial on the HH machine carries hooks and cast-off prongs which work together and perform the same function as the dial needles on a ribber. Since the make-up mechanism on the half-hose machine is equipped to knit a ribbed top, the knitting of the welt and transferring the make-up courses to the cylinder needles is not as simple as with women's hose machines.

It is considered best practice to set the dial as low as possible. In this position, with the hooks of the dial jacks holding the make-up course while the welt is being formed, the fabric can sag inward and so obviate the tendency of ballooning outward and slipping off the hooks as would be likely if the dial were set higher. If the dial is set high enough to hold the fabric under tension while the welt is being knit, not only may it strain or break the make-up loops, but it will hasten the wear of the bottom slot in the dial and cause a clearance between the hook and castoff which seriously affects efficiency of these parts.

The following is a good test to use in checking the setting of the cylinder to the dial: when the machine is ready to start the knitting cycle, place a screw driver under the bracket through which the tube-adjusting screw passes, and pry lightly; if about $\frac{1}{32}$-in. play can be felt between the cylinder and dial, the setting is correct.

If the proper number of high- and low-butt hooks or jacks are in the dial and they are correctly flexed to give sufficient friction in their respective slots, and if the tension is correct for the kind of yarn used, there should be no trouble during the make-up knitting. On a 176-needle machine it is customary to use 40 high-butt and 48 low-butt jacks. On a 220-needle machine the ratio is 50 high-butt and 60 low-butt. And to get sufficient friction without undue wear, the hook part of the jacks should be flexed about $\frac{1}{16}$th in. at the middle.

If the HH machine is to transfer the make-up course to the cylinder needles accurately, the dial hooks holding the make-up loops must be set very closely to the jackless cylinder needles as the latter are rising to receive the loops. The cylinder needles are set to the right-hand side of the dial hooks when the dial is faced. This adjustment can be made very closely by screws on the arm of the driving bevel gear. (Fig. C29 shows how the needles should be set.



Scott & Williams, Inc.

Fig. C29. Proper setting of needles on Model HH machine

Whenever it is difficult to get the dial jacks and the cylinder needles set just right, the cross bar should be examined to see that it has not been jarred or loosened from position. For plumbing the cross bar to determine whether or not it is holding the dial perfectly concentric with the needle circle, a special device is provided. This consists of a disk, with a reamed hole exactly in the center, which fits accurately inside the cylinder needle circle. A carefully finished pin of hardened metal goes with this disk. If the pin passes freely through the cross bar and into the hole in the disk, the dial is correctly adjusted; if it does not pass through freely, the cross bar must be adjusted until it does.

Every fixer knows that the plating needle, which has the small hook set forward, gives best results when transferring on these machines. But occasionally fixers allow needles to get mixed on the cylinder when changing from one make to another. This is not a good policy because differences in the needles may prevent uniform transfer.

FREE FOR THE ASKING

Readers interested in literature reviewed on this page may secure copies by writing to Textile World, 330 West 42nd St., New York, giving their company connection, title of item desired, and date of issue in which it was reviewed.

Increased production by overhauling and reconditioning carding and spinning equipment is a topic of discussion in the November issue of *Davis & Furber News*, published by Davis & Furber Machine Co.

Some aids to weaving premium priced fabrics are given in the December issue of *Cotton Chats*, published by Draper Corp.

A new recording photoelectric spectrophotometer for the graphic measurement of color is described and illustrated, and the advantages are given in pamphlet GEA-3680, published by General Electric Co.

Improvements in boiler operation and supplementary water treatment, and the advantages and economies of the various types of treatment, are dealt with in a publication "Supplementary Treatment of Boiler Feedwater," by the Permutit Co.

For engineers and executives who deal with inventions, a 54-page booklet entitled "Patent Background for Engineers," written by patent attorneys and engineers, has been issued by Allis-Chalmers Mfg. Co.

Making one's own electricity with diesel electric sets, and the advantages of an independent source of current, are explained in a 20-page illustrated booklet, form 6905, prepared by Caterpillar Tractor Co.

Rectified fluorescent lighting for today's defense and tomorrow's industry is the topic of the 24-page illustrated booklet, No. Y-1251, prepared by Lamp Dept. of General Electric Co.

Properties of carbon and alloy steel tubing for high temperature-high pressure service, is the subject of technical bulletin 6-D, issued by Babcock & Wilcox Tube Co.

Developments in brushing machines, improvements in protective devices on brushing machines, and the rehabilitation of clothroom equipment are discussed in the October and November issues of *The Clothroom Spotlight*, published by Hermas Machine Co.

Fire retardant paint is one of the interesting topics discussed in Vol. 34, No. 4, of the *Dutch Boy Painter*, published by National Lead Co.

Processing products for silk hose replacement, and technical information on the preparation of substitute materials are discussed in the November–December issue of *Houghton Line*, published by E. F. Houghton & Co.

Open-end V-belting, sizes available, limitations, recommended pulley diameters, rules for applications, and fasteners and tools used in insulation; and Plastikon rubber putty, its properties and directions for use, are the subjects of two recent catalogs published by B. F. Goodrich Co.

Refractory products available today for industry's varied requirements are illustrated, and useful tables on use of various types of brick are presented in a catalog published by General Refractories Co.

Integral-furnace boilers in capacities as low as 135 hp. are illustrated and described in bulletin G-34-A; and latest creep-stress data on tubular material for high temperature service are listed in TDC-102-B, prepared by Babcock & Wilcox Co.

Electronic control system for the operation of direct-current motors from alternating current lines is illustrated, and charts, diagrams, and descriptions of its use are given in the publication GED-972-A, issued by General Electric Co.

Ball bearings equipped with close-fitting metal shields for retaining grease and preventing entrance of dirt are explained in a catalog published by Norman-Hoffmann Bearings Corp.

A 2,300-volt contactor motor starter which has been safely applied to high-capacity power circuits is explained in design and construction in the publication GEA-3660, issued by General Electric Co.

Self-locking nuts, their advantages and many of their uses, are discussed in a folder issued by the Elastic Stop Nut Corp.

Automatic-cycle control systems in operation on furnaces for heating iron castings are described and illustrated in bulletin IDS28, prepared by the Bristol Co.

An analysis of the trend in fluorescent lighting is presented in the October issue of *Hygrade Lighting News*, published by Hygrade Sylvania Corp.

Rayon warp sizing, with particular attention to the subject of guarding processing water against infiltration of impurities, is discussed in the October issue of *Rayon Warp Sizing Specialist*, published by Charles B. Johnson.

The first chapter of a many-sided story telling why both management and labor find Pennsylvania a profitable and congenial place to live and work has been published by the Commonwealth of Pennsylvania, Department of Commerce.

Uses of steel straps for packing and shipping government orders and other defense material are described in bulletin No. 4 of *Acme Process News*, published by Acme Steel Co.

Aluminum in war, both for military and non-military uses, is discussed in the November issue of *The Aluminum News-Letter*, published by Aluminum Co. of America.

Eight rules to help manufacturers conserve time, space, and money are enumerated in "How to Stack & Load Corrugated Shipping Boxes," published by Hinde & Dauch Co.

Electrical equipment is described in the following recent publications: Low-voltage switchgear for use in central stations, industrial plants, and commercial buildings, in booklet B-2296; fractional horsepower motors from 1/6 to ½ hp., 145 frame size, in folder F-8623; crane controls for hoist motors in material handling systems, up to 330 hp., in leaflet B-3020; prepared by Westinghouse Electric & Mfg. Co.

How to break in new rings, and the situation with regard to synthetic yarn, are two subjects discussed in the October issue of *The Traveler*, published by Victor Ring Traveler Co.

Variable-speed drives and a 4-point program of service is outlined in a folder recently published by by Reeves Pulley Co., of N. Y.

Lubrication of electric motors is discussed, and a chart giving recommended lubricants for various types of electric motors and generators is presented in the fourth edition of *The Service Factor*, published by Sinclair Refining Co.

Winding on the Model 102 winder is the subject of bulletin A-91, published by Foster Machine Co.

Correct velocity where needed most when cleaning with automatic air cleaners is discussed in the November issue of *The Swirling Column*, published by American Monorail Co.

Plans for increasing working capital of business to take care of increased operations are described in a booklet "New Ways to Increase Profits," prepared by The Pennsylvania Co.

Softening water for domestic consumption and industrial uses, and the advantages of the various systems and when they should be used, are discussed in bulletin No. 112, published by American Water Softener Co.

Fugitive tints used for identification of textile fibers are described in a 22-page illustrated booklet "Using the Rainbow," published by Borne-Scrymser Co.

Nylon-insulated magnet wire is described, specifications are given and uses and advantages are illustrated, in two folders prepared by Anaconda Wire & Cable Co.

High-production dryers for both rawstock and fabrics, and fulling and washing units for universal work, are pictured and described in the November issue of *The Hunter Counselor*, published by James Hunter Machine Co.

NEWS OF THE MONTH

Associations Mobilized for War

The textile associations jumped into the war picture right after Pearl Harbor. Among the various steps was the appointment of a special War Activities Committee by the Association of Cotton Textile Merchants of New York to insure a maximum of vigorous and effective participation of this section of the industry in the nation's war effort. . . . . The Southern Combed Yarn Spinners Association pledged 100% cooperation to the Quartermaster General in seeing that the Government obtains all necessary combed yarns for procurement purposes. Gen. Corbin, assistant Quartermaster General, replied: "To attain victory we must aim to greatest possible production." . . . . The Rhode Island Textile Association sent resolutions to President Roosevelt pledging the industry's "complete and unquestioning support to the Government." . . . . The American Cotton Manufacturers Association stated that, if a seven-day week is necessary to handle the needs of the country's uniformed forces, the mills will enter into this program with all their resources. . . . . The New York Cotton Exchange adopted a resolution pledging the members to assume willingly and cheerfully any burden or duty asked of them by their Government in the prosecution of the war to victory.

King Cotton Bans Frivolity; Goes to College

King Cotton made two major moves in his career last month. First, with the outbreak of war the executive committee of the Cotton Carnival Association in Memphis, Tenn., announced that for the first time in 12 years Memphis will have no cotton carnival in the spring. The announcement was in the form of a resolution approved by the Board of Directors of the Carnival Association which stated:

"That the frivolity and extravaganza of the usual Cotton Carnival be suspended in keeping with the seriousness of these stringent times and that the future policy of the association will be to keep the organization intact to the end that the association may serve the armed forces, Governmental authorities and the public in any manner that may be requested."

The other change in King Cotton's attitude was shown by his matriculation at the University of Mississippi when for the first time a week-long cotton program was held at the southern college. The program was under the auspices of the National Cotton Council, the Cotton-Textile Institute and the Mississippi Federation of Women's Clubs, and featured a study of cotton economics. Among the events were a cotton forum held by O.D.K., men's leadership group of the University, and throughout the week the importance of cotton to southerners was stressed in all classroom lectures. A little socializing made the program palatable, a cotton stunt night, a cotton parade, and a cotton ball were included.

OPM Opposes Exportation of Textile Machinery

The sale of textile machinery from dismantled textile mills to countries other than the United States is frowned upon by OPM, according to a statement issued in Washington Dec. 28. It was argued that because of shortages of textiles of all kinds, no machinery capable of operation should be exported.

Promotion Meeting Becomes War Meeting

The deep and far-reaching adjustments that are likely to be imposed on the production and distribution of cotton goods as the war intensifies were the main topics of discussion at the annual mid-winter meeting of the Cotton Consumption Council, held at Columbia, S. C., Dec. 8, the day after Pearl Harbor. Originally called for the purpose of considering plans to promote the consumption of cotton during the coming year, the meeting soon developed into a discussion of the probable effects of the outbreak of war in the Pacific on all sections of the industry.

Dr. C. T. Murchison, president of the Cotton-Textile Institute, asserted that the main task of the industry from now on would be to supply the material required for a successful prosecution of the war and added that all other aims and plans would be made subordinate to this. He explained that the spread of the war would undoubtedly cut off or reduce imports of many textile fibers and that cotton would be called upon to make up the shortage.

One-Variety Cotton Program

In an address to cotton leaders at a recent barbecue held at Crossville, Ala., Donald Comer of Avondale Mills Co. de-

VIEW IN NEW RECEPTION ROOM just completed for the Rayon Department of E. I. du Pont de Nemours & Co., at its New York offices in the Empire State Building. Modern interior decoration is combined with an educational story in three-dimensional displays. The room was designed and executed by Ad-Pro Displays, under the supervision of Maurice H. Mogulescu. A series of sets, recessed in the circular wall of the half-oval room, illustrate with symbolic forms the ingredients, manufacturing processes, and uses of Du Pont rayon yarns, Nylon, and Cellophane.

The
STARCHES
You Need

for Every
Textile Purpose

- Pearl Corn Starch
- Thin-Boiling Corn Starches
  (all fluidities)
- Corn Dextrines
  (white and yellow types)
- Corn Gums
  (for printing and finishing)
- Fiberjel "V"
  (for Filament Viscose Sizing)
- Fiberjel "SR"
  (for Spun Rayon Sizing)

Our Textile Chemists can help you obtain the results you want. Their services are at your disposal.

NATIONAL STARCH PRODUCTS Inc.

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cleared the one-variety cotton program in the Sand Mountain area of that State was the outstanding accomplishment of Alabama agriculture. It was stated that the Stoneville variety of cotton has proved outstanding for that section and as an example it was cited that on 29 acres at the Sand Mountain Experiment Station 55 bales of cotton had been grown.

Cotton Council Meets at Jackson

Leaders of agriculture and industry will address the delegates of the National Cotton Council at its fourth annual convention at Jackson, Miss., Jan. 26 to 28. Speakers include Oscar Johnston, president of the Council; Edward A. O'Neal, president of the American Farm Bureau Federation; and William N. Banks, president of the American Cotton Manufacturers' Association.

Stressing the fast-growing importance of the women's work clothing market, Miss Virginia Jewel of New York, fashion director of the National Cotton Council and the Cotton-Textile Institute, will stage a showing of new war-workers' garments designed for women and being marketed in industrial centers throughout the nation.

Research Rewards Reported

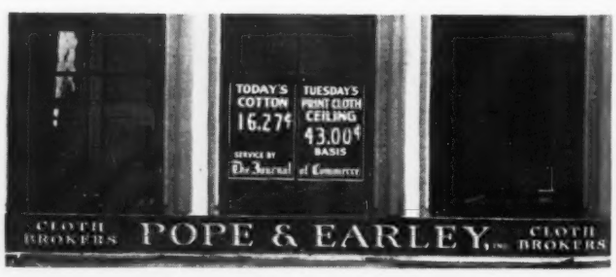
Development of the first successful process for rendering cotton and rayon fabrics resistant to crushing and creasing, and the unexpected results obtained when card speeds, were increased during a recent investigation of cotton carding are two of the case studies in the rewards of research reported in the current issue of *Textile Research*, official publication of Textile Research Institute, Inc., and Textile Foundation.

An increase in cotton yarn strength was the unexpected result obtained in a number of mills when card speeds were raised. In one mill, for example, when cotton cylinder speeds were raised from 172 to 196 r.p.m. to increase production, it was found that yarn strength increased from 61 to 64. No theory has been evolved as yet to explain this phenomenon, which was reported at a recent meeting of the Southern Textile Association by Prof. George A. Dunlap, director of the research program being carried out by the STA and the Arkwrights under sponsorship of the Textile Foundation.

The crush-resistant process referred to was brought to a commercial stage after 14 years of research by Tootal, Broadhurst & Lee Co. It led to a major change in textile processing techniques.

Wholesalers Hold 15th Annual Meeting

The Wholesale Dry Goods Institute will convene on Jan. 20, 21 and 22 at the Hotel Astor, New York, for the 15th annual meeting. Murray Shields, economist of the Irving Trust Co., will speak on post-war economic prospects: War-



WORTH ST. gets its average spot cotton price promptly through the bulletin board installed in the second-floor windows of Pope & Early, cloth brokers of 56 Worth Street, supplied in cooperation with the Journal of Commerce. The price is posted each afternoon as quickly as it is made up from southern wires and the ceiling price per pound for print cloths effective on the succeeding day is displayed.

"SWEATER GIRL OF 1941," selected from over 5,000 entries in a nation-wide contest, is 19-year-old Margaret Landry of Baton Rouge, La. As the first prize winner, she received $500 in cash and a trip to New York. The competition was sponsored by Olympic Knitwear, Inc., and was conducted by stores carrying Tish-U-Knit sweaters. Photographs of Miss Landry will be used by Olympic in its advertising this coming spring.

time merchandising will be discussed by Robert F. Chisholm, wholesale trade administrator of the Canadian Wartime Prices and Trade Board. F. S. Blanchard, textile consultant of Bureau of Industrial Conservation, OPM, will also speak. On Jan. 21 there will be a special manufacturers' session with Richard L. Moyle of Kendall Mills as chairman.

"Bed-Post Grab" and "Cat Stretch"

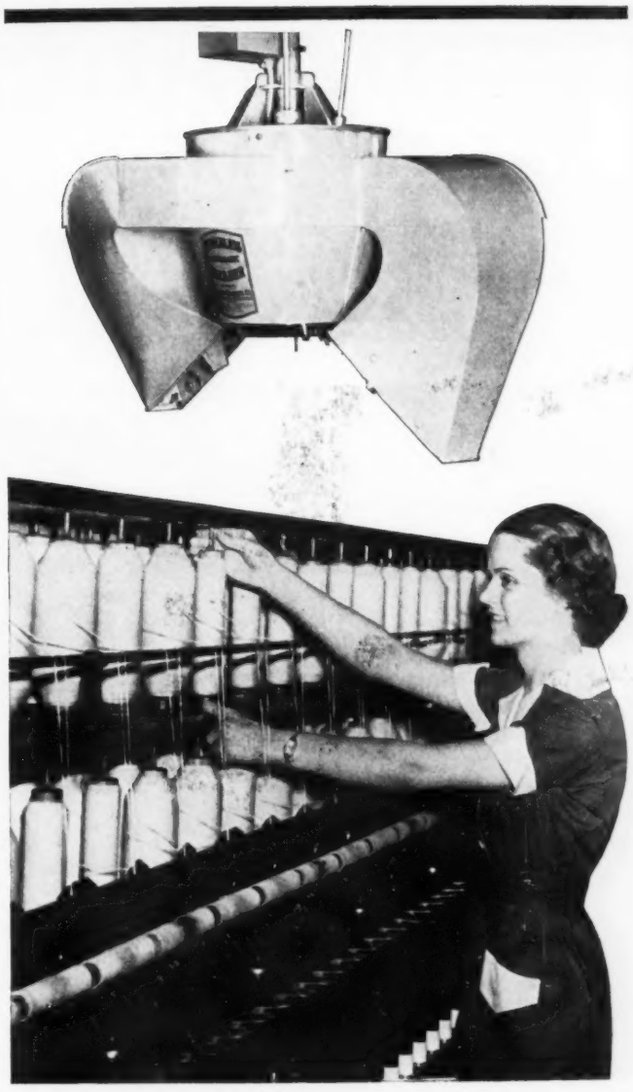
Indicative of the amazing drawing power of a woman's radio program in a metropolitan area is the return on a ten-minute interview with Martha Alden, "sleep consultant" for Pequot Mills, conducted by Nancy Boothe Craig on her program, "Women of Tomorrow." As a means to allay insomnia Miss Alden devised a series of sleep exercises to be executed immediately before sleep is desired. Exercises have such picturesque names as "Bed-Post Grab" and "Cat Stretch."

Speaking for Miss Alden's exercises, Miss Craig offered to send free to listeners copies of Pequot's sleep exercises. Within several days more than 2,700 requests for these exercises have been received.

Sir Kenneth Lee Addresses Textile School

A picture of what England has had to face as a nation at war was given to students and faculty of the Philadelphia Textile School on Dec. 9, two days after Pearl Harbor, by Sir Kenneth Lee, United States representative of the Industrial and Export Council of the British Board of Trade. He spoke particularly of the problems and hardships involved in the rationing of clothing, etc., and in the concentration of industries.

The concentration was primarily for the purpose of making the rationing effective, and to provide more goods. He pointed out that Great Britain has closed a great many mills and has made other mills do double time. In the cotton industry, 217



SPINNERS
like traveling cleaners

With Parks Traveling Cleaners all installed and running, it often turns out that the spinners can take on more sides. They seem glad to.

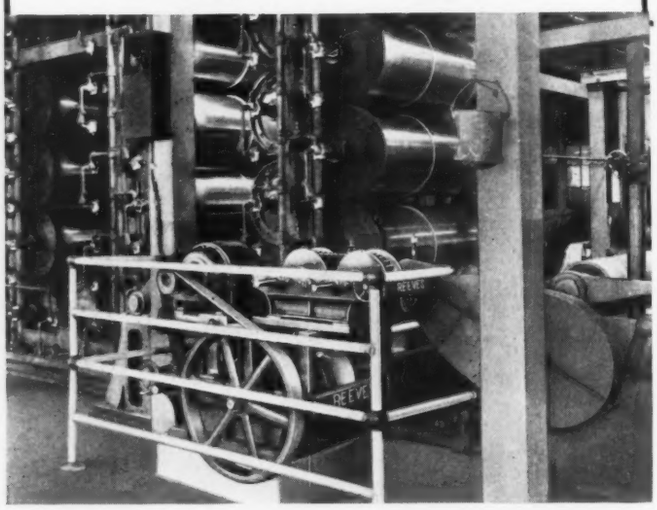
Instead of working harder, these automatic mechanical devices have made their work easier.

Parks Traveling Cleaners are helping to make more and better textiles at less cost.

Parks-Cramer Company

Fitchburg, Mass. Charlotte, N. C.

OPERATE MANGLE AND DRY CANS *separately or in synchronization*



● Mangle and dry cans are synchronized in the range by the two REEVES Transmissions shown, driven by individual motor and so arranged that they may be separated from the range and operated alone when necessary. The larger Transmission drives the cans and also the input shaft of the small Transmission so that when speed is changed on the large Transmission speeds of the cans and padder change together. Speed of the small unit can be changed individually to regulate cloth tension between padder and cans. REEVES Variable Speed Drives are the textile industry's approved method for infinite, accurate speed regulation. Standard equipment on most leading makes of new machines; easily applied to machines in service. Complete line to choose from. Write us.

REEVES PULLEY COMPANY, *Dept. W,* **COLUMBUS, INDIANA**

ACCURATE VARIABLE Reeves **SPEED CONTROL**

Left to right: **TRANSMISSION** provides infinite speed adjustability over wide range, 2:1 to 16:1 inclusive; modern, compact, open and enclosed designs . . . **VARI-SPEED** Motor Pulley, simple, direct drive for requirements from fractional to 15 H.P.; 3:1 range . . . **MOTODRIVE** combines motor, speed varying mechanism and reduction gears.

spinning mills and 365 weaving mills have closed, to release 60,000 working people for the munitions industry.

Sir Kenneth was introduced by Dean Earl Heard who pointed out that the best service civilians can offer in war time is to do their jobs every day and be ready to go where they are needed, when they are needed.

Third Textile Committee to Meet Jan. 21

Appointment of a third committee to recommend a minimum wage in the textile industry was made Jan. 6 by Thomas Holland, recently-appointed Administrator of Wage and Hour Division, U. S. Department of Labor. Committee will meet in Room 3229 of Department of Labor on Jan 21. Alexander Hamilton Frey, Professor of Law, University of Pennsylvania, will be chairman. Mr. Holland has succeeded Baird Snyder, who previously had succeeded General Fleming as Administrator when the General was transferred to head Federal Works Agency.

Sixth Annual Hosiery Conference on Jan. 15 and 16

The sixth annual hosiery industry conference is being held at the Waldorf-Astoria, N. Y., on Jan. 15 and 16. Attendance is open to all executives of the industry regardless of whether they are affiliated with the sponsoring associations. There will be two morning sessions and one afternoon session, the latter devoted to divisional meetings.

Celanese Goes on the Air

Celanese Corp. of America, New York, is the first major producer of synthetic yarns to adopt the radio on a national scale for presenting its yarns, fabrics and plastics to the public. The sponsor will also give timely information concerning their civilian and military uses.

Under the title of "Great Moments in Music," Celanese initiated the weekly program on Wednesday, Jan. 7, over the Columbia Broadcasting System, using 57 stations. The program will be heard every Wednesday evening from 10:15 to 10:45 p.m., Eastern Standard Time, with familiar melodies from grand operas. The potential audience is estimated at 23,000,000 families.

HUNTING SUIT tailored from tackle twill announced recently by Oldin-Dennis, Inc., New York. The fabric is a development of William Skinner & Sons and is made from cotton and high-strength Crown Tested rayon.

TEXTILE CALENDAR

Annual Hosiery Industry Conference, Waldorf-Astoria Hotel, New York, Jan. 15 and 16, 1942.

Alumni Association of Philadelphia Textile School, annual banquet, Philadelphia, Pa., Feb. 20, 1942.

Knitting Arts Exhibition, Atlantic City (N. J.) Auditorium, Apr. 27 to 30, 1942.

Southern Textile Association, annual meeting, Blowing Rock, N. C., June 11 to 13, 1942

A.A.T.C.C. Notes

At a recent meeting of the Philadelphia section of the American Association of Textile Chemists and Colorists, Arthur E. Jones, of Alco Oil & Chemical Corp., was elected chairman. At a meeting of the South Central section, Jack Anderson, of Peerless Woolen Mills, was elected chairman. At a meeting of the Southeastern section, Robert J. McCamy, of Pepperell Mfg. Co., was elected chairman. Principal speaker at the meeting of the South Central section was W. W. Trowell, of Hercules Powder Co., who discussed the role of cellulose derivatives in textile finishing.

New Defense Course in Textiles

E. W. Ruggles, director of the defense training courses conducted at North Carolina State College under the supervision of the United States Office of Education, announces that the fourth course in Fabric Testing and Inspection will begin on Feb. 2 and run for 12 weeks. All expenses except board, room rent, and books are paid by the Federal Government.

Students who enroll in this course will be taught elementary textile design, fabric analysis, fabric calculations, structure and analysis of knit goods, the care and operation of fabric testing equipment, physical and chemical tests for the identification of fibers, as well as a study of yarn and fabric defects. Students may qualify for Government service in the Quartermaster Corps as fabric inspectors.

Enrollment in the course is limited to 22 and applications should be made as early as possible to E. W. Ruggles, State College Station, Raleigh, N. C.

Trade-Practice Rules for Rayon Finishing Industry

Trade-practice rules for the rayon and silk dyeing, printing, and finishing industry were promulgated on Dec. 12 by the Federal Trade Commission. Among practices covered are included: misbranding and misrepresentation, deceptive concealment, substitution of products, defamation of competitors, commercial bribery, inducing breach of contract, selling below cost, and discriminatory prices.

Standard Ninth Edition Color Card

The Standard Ninth Edition, a new master color card for all industries and trades, has just been released by The Textile Color Card Association. It was emphasized by Margaret Hayden Rorke, managing director, that this was not a card presenting fashion colors for one season only, but that it embraced a complete collection of important staple shades having continued popular acceptance. The first standard edition was brought out during the last war in 1915 and revised from time to time, the eighth edition having appeared in 1928. The shades assembled in this new card were adopted by a majority vote of the Association's mem-

No acids, no alkalis, no harsh chemicals to injure the sheerest fabrics

Desize with
EXSIZE

Because Exsize is a concentrate of natural enzymes, it has no harmful effect on any animal, vegetable, or synthetic fibre. Its gentle natural action leaves even the most delicate fabric in perfect condition—clean, soft and absorbent.

Exsize ideally prepares fabrics for better bleaching, dyeing, and sanforizing. It works quickly and thoroughly and its cost is nominal. FREE booklet on request.

Our laboratory facilities and practical field men are available to help you with desizing problems.

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CHICAGO, ILLINOIS

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Warehouses at New York, and Textile Warehouse Co., Greenville, S. C.

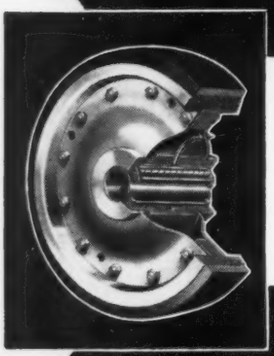
SAVE FLOORS . . .

SAVE EQUIPMENT . . .

SAVE TIME . . . . .

SAVE THREE WAYS

Darnell Double Ball-Bearing Casters and E-Z-Roll wheels reduce floor wear to a minimum, lengthen the life of equipment and increase the efficiency of employees—Write for 192 page Darnell Caster and Wheel Manual.



A SAVING AT EVERY TURN

High Speed Production Methods demand a Caster that can stand punishment – for dependability and safety specify....

DARNELL CASTERS & E-Z ROLL WHEELS

Write for Free 192 Page Darnell Manual describing nearly 4000 types of Casters and Wheels.

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bers, representing practically every industry using color. To determine these color preferences, the Association sent out thousands of questionnaires, to which there was wide response.

New Dyeing Process

A new dyeing process for knitting yarns has been announced recently by R. Wolfenden & Sons, Attleboro, Mass. Known as the Bubble-Dye process, it is said to be especially adaptable for angora, cashmere, specialty blends, etc. Advantages cited are that it eliminates boiling and thereby avoids injury to delicate fibers, affords better penetration, gives minimum matting, and adds to the brilliance and clarity of the shades.

This and That

All chlorine produced in the U. S. will be subject to direct allocation after Feb. 1, and from that date no deliveries may be made without specific authorization from OPM.

Price of Aralac casein fiber was advanced from 45c. per lb. to 64c. per lb. on Jan. 1. The price change was due to an increase in the cost of casein.

American dye companies increased output nearly 45% in 1941 as compared with 1940, according to estimates released recently by E. I. du Pont de Nemours & Co. Estimated 1941 production was 110,000,000,000 lb., a new high mark.

Production of soy-bean fiber will be carried out by Ford Motor Co. at its Dearborn, Mich., plant. Production will be at the rate of 1,000 lb. per day. Previously, Ford has been producing soy-bean fiber experimentally at a pilot mill in Highland Park.

Restriction of use of crude rubber or liquid latex to defense purposes is expected to impede or stop the manufacture of elastic and elastic yarns for civilian uses.

Price of bleaching powder has been stabilized by a series of individual agreements with producers according to Leon Henderson, OPA Administrator.

Callaway Towel Salon on Lincoln Road, Miami Beach, opened Dec. 1. This is the second year for this enterprise which serves as a testing laboratory for sales display and promotion ideas on towels, bathmats, shower curtains and drapery fabrics.

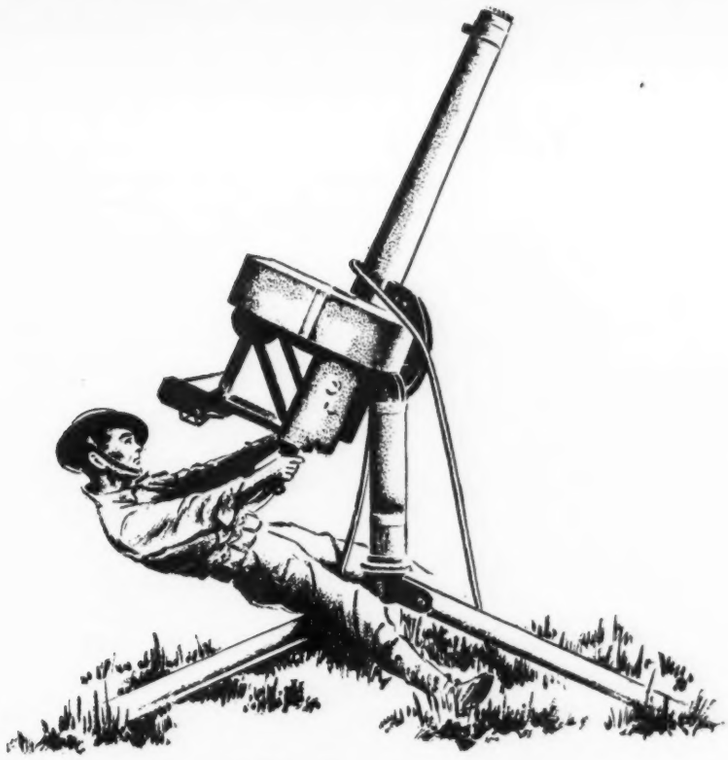
Pacific Mills "Facbook" labels have been approved by the National Consumer-Retailer Council, New York. These labels are used on Pacific muslin sheets and will bear the legend "This is the type of label suggested by the National Consumer-Retailer Council, Inc."

The wool felt industry, through a recently appointed information committee of the Felt Association, will inaugurate a public relations educational campaign calling the attention of the public to the widely diversified uses for wool felt.

Botany Worsted Mills, Passaic, N. J., has installed a record-playing system for supplying music to its workers on a regular schedule similar in principle to the system described on page 105 of our December, 1941 issue. The Botany system can also be used with a microphone as an inter-communicating system.

The first medal of the Fact-Finding Judge and Jury (leading American club women) was presented on Dec. 9 to Theodore Wood, merchandising manager of American Bemberg Corp. at a luncheon at the Advertising Club, New York. In the presentation the importance of the company's certified control plan was stressed. In accepting the medal, Mr. Wood reported that last year 6,000 dresses were made of one fabric in the certified plan year and that no complaint was received from a consumer.

Oscar Heineman Corp., Chicago, former silk throwsters, are operating at a rapidly increasing rate in processing of



"Let's get this one over in a hurry . . ."

122 years ago our Republic was forty-four years old in its independence—big and raw and just beginning to feel its strength.

122 years ago, H. W. Butterworth established this business to pioneer, develop and supply machinery for the Wet End of the Textile Industry.

For several years the business prospered, serving the needs of mills which in turn supplied the textile requirements of a nation at peace. Then came war. Heavy demands were made on the mills for fabrics and we strove to provide the equipment necessary for a bigger output.

Again peace—again war . . . Again peace—again war . . . Four times in 122 years. Each war has brought heavier demands from Textile Mills—and in war as in peace we have stood by to supply equipment as quickly as possible.

Again it is war—again it is Textiles for Victory! The manufacture of gun mounts has first call on our facilities, but we are still here to help you improve, repair and replace obsolete equipment to the utmost of our ability.

And again we say, "Let us all exert ourselves as we never did before—let's get this one over in a hurry!"

***64%**

of equipment now in use in the wet end of textile finishing cannot operate at a profit in competition with modern machines.

*Proved by Research

H. W. BUTTERWORTH & SONS CO.
Main Office and Works, Philadelphia, Penna.
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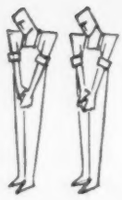
Butterworth

PRODUCING GUN MOUNTS FOR THE UNITED STATES ARMY

DON'T BLAME INNOCENT MEN



If you have a feeling your bobbin cleaning is not being handled efficiently and economically, take a look at your equipment. The chances are you'll find, as hundreds of other mills have, that it is obsolete and incapable of keeping pace with today's heavy production schedules.

The *production value* of Terrell's Modern Bobbin Cleaning and Handling System cannot be approached by any other method. Proof of this lies in the fact that every installation made to date has paid for itself, usually within eighteen months—always within two years. This sturdy, compact unit—including the New Type K Bobbin Stripper, Automatic Bobbin Box Hoist and Conveyor Elevator, enables you to meet today's need for speed with equipment that will be equally as valuable after the present emergency is over.

Full particulars on request.

The **Terrell Machine Co.,** *Inc.*
CHARLOTTE, N. C.

James F. Notman, Needham, Mass.....N. E. States
E. W. S. Jasper, Inc., Elizabeth N. J.....Penn., N. Y. and N. J.
W. J. Westaway Co., Ltd., Hamilton, Ont.....Canada
Geo. Thomas & Co., Manchester, Eng.....European Agent

rayon and Nylon for the hosiery industry. The company had never processed these synthetic yarns before the freezing of silk stocks.

Wholesale Dry Goods Institute, through its board of directors, has decided to appeal the cease-and-desist order issued against it recently by the Federal Trade Commission. It is expected that the appeal will be taken to the Circuit Court of Appeals of the Second District, New York.

Price Freezing Hits Most Textile Markets

Cotton goods settled into a narrow quiet market toward the year's end as many mills withdrew offerings. Manufacturers, already well sold, desire to wait until the forthcoming increase in military needs is better defined before taking further civilian contracts. Freezing of non-ceiling gray and finished goods prices induced other sellers to withdraw. Ceilings for gray goods went to a basis of 44.50c. a pound for print cloths on Dec. 21 owing to a rise in cotton. That was the highest basis reached up to that time under the sliding scale system. Canton flannel mills adopted a simplification scheme and among other things have eliminated all goods lighter than 6 oz. Unsold stocks of wide print cloths were reported early in December as less than two days' production, stocks of carded broadcloths less than three days' production, and stocks of narrow print cloths two and a quarter weeks production.

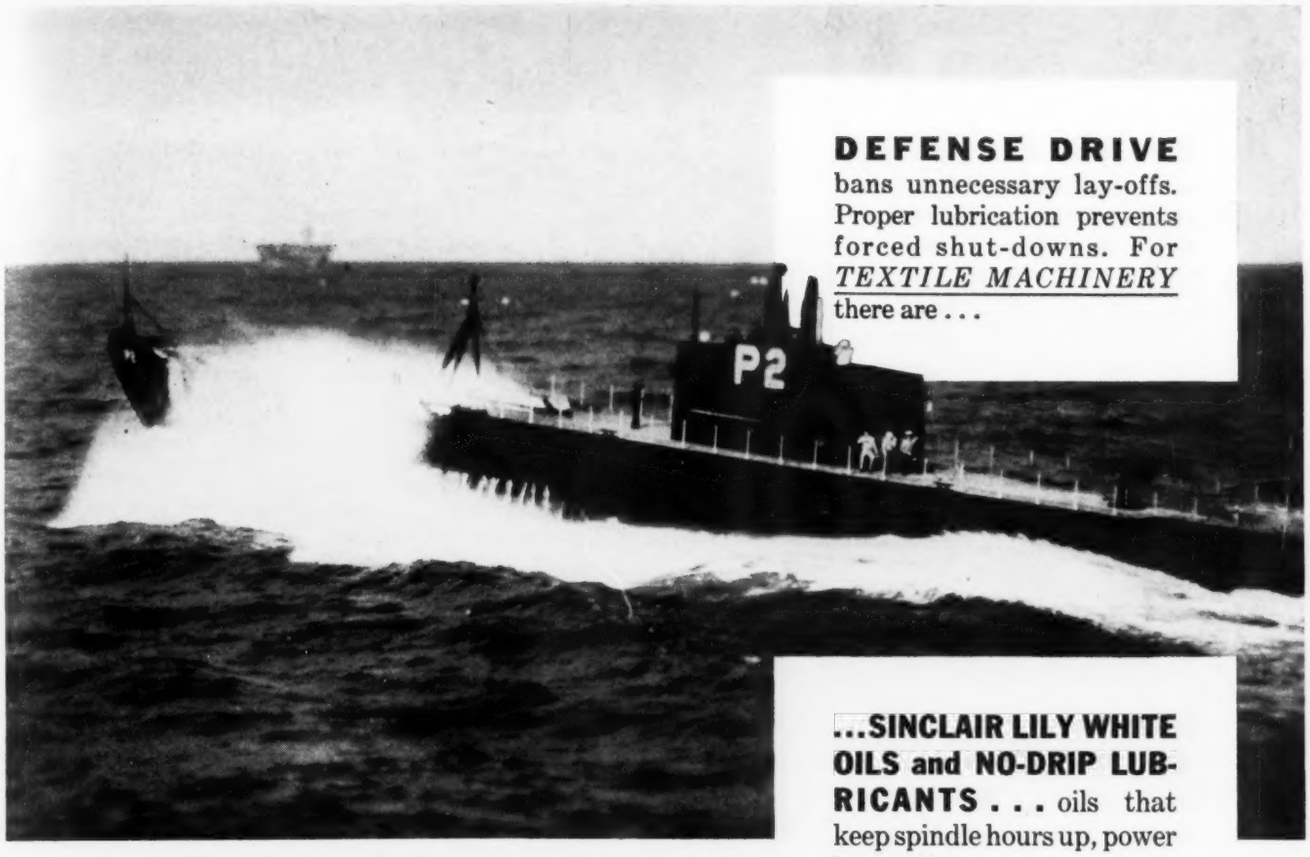
Wool goods price freezing involved numerous petty problems, but as an emergency plan to avert a runaway market it was reasonable. Clothiers are fearful that mills may abandon civilian business to run entirely on military fabrics. The fact that a few mills took orders for February-March delivery after Dec. 6 on lines which had not been quoted for some time, brings question whether they would have to go back to their last summer's figure in order to meet Government requirements of not exceeding the "top" prices as of Dec. 6. Undoubtedly, larger quantities of wool substitutes will come into use as the supplies of new wool are directed into military channels.

Rayon weavers are worrying over their prospective yarn supply for 1942. The new needs for synthetic yarns have cut down the quota available to weavers. Not only have knitters who formerly used silk been allocated rayon yarns, but the South American countries have also been allotted a share. Staple fiber situation is also tight and no new increase in 1942 is in sight. However, American Viscose Corp. has produced approximately 80,000,000 lb. of staple fiber in 1941 which is an increase of nearly 35% over that company's 1940 production plus its imports. The freezing of prices on converted rayons to the highest figures prevailing between Nov. 1 and Dec. 6 was not regarded as a hardship by converters.

Hosiery items in silk in retailers' hands following Christmas trade are considerably reduced and will probably be worked off within the next few months. Mills are now turning to the substitute materials, many of which got their first real try-out over the retail counter during the Christmas season.

Underwear manufacturers were doing some early business for next fall at the end of December, but it was limited to deliveries in the first quarter of the new year. Most knitters will wait to get a better line on Government needs before opening the later deliveries. In women's underwear of the more expensive types, Nylon is being highlighted.

Outerwear manufacturers find themselves facing restrictions on wool. The future of many all-wool lines will remain obscure until military requirements in wool are figured against available supply. New packaging methods will come into vogue in this trade following the prohibition by OPM of the use of cellophane after Jan. 8.



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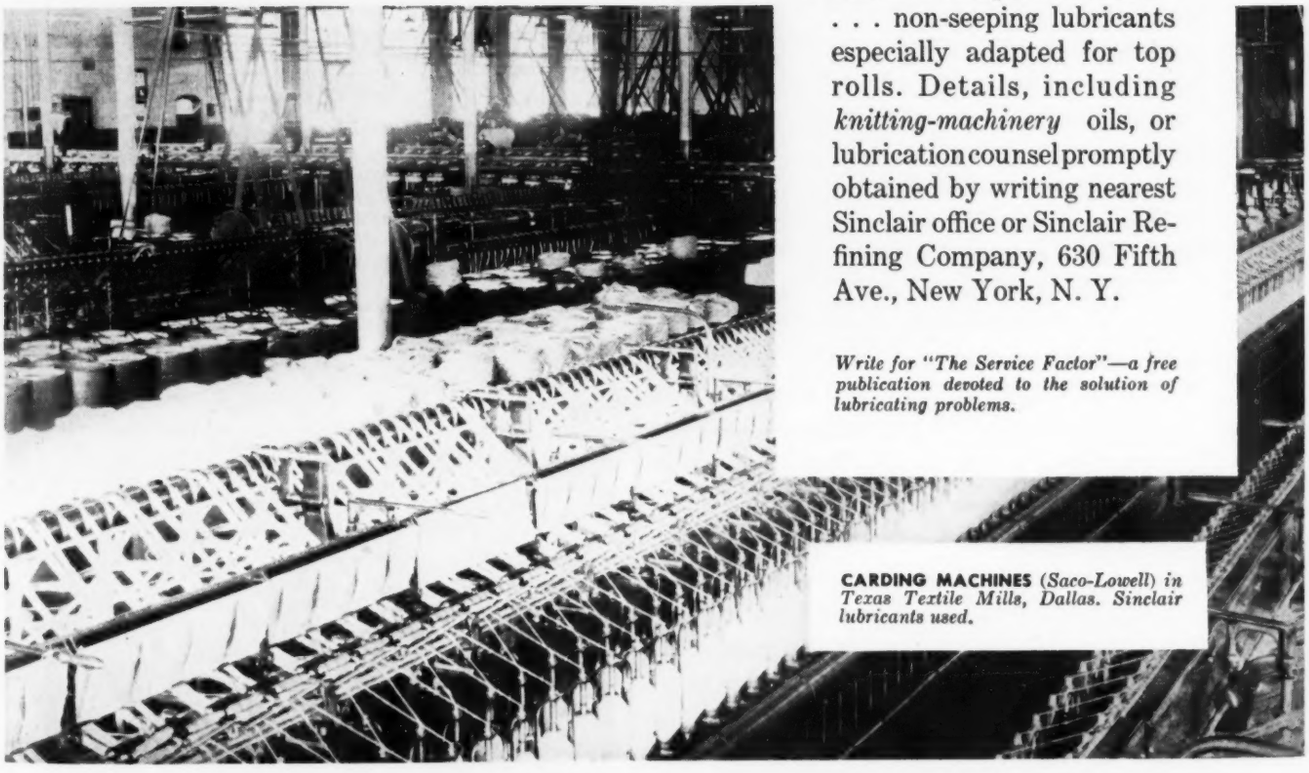
. . . SINCLAIR LILY WHITE OILS and NO-DRIP LUBRICANTS . . . oils that keep spindle hours up, power loss and temperature down . . . non-seeping lubricants especially adapted for top rolls. Details, including *knitting-machinery* oils, or lubrication counsel promptly obtained by writing nearest Sinclair office or Sinclair Refining Company, 630 Fifth Ave., New York, N. Y.

Write for "The Service Factor"—a free publication devoted to the solution of lubricating problems.



CARDING MACHINES (*Saco-Lowell*) *in Texas Textile Mills, Dallas. Sinclair lubricants used.*

SINCLAIR TEXTILE LUBRICANTS

SINCLAIR REFINING COMPANY (Inc.)

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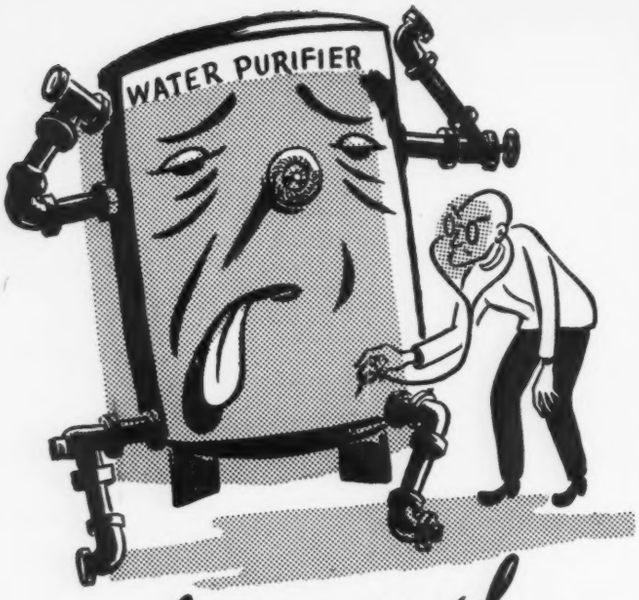


"A bad case of senile debility"

Even the best of water purifying systems can develop old age troubles and impaired efficiency. In these days, priorities make renewals of this equipment difficult if not impossible. But don't let that discourage you.

Free Consultation

Just write us requesting a survey of your water purification plant and we will instruct a nearby H & T engineer to go over it inside and outside. His report and recommendation for rejuvenating the system will be turned over to you without fee or obligation. Perhaps he will find it "OK as is", but it's good to know—not guess—about the condition of your present water purification equipment and purity of your water supply. A letter will make the next move ours.

HUNGERFORD & TERRY, INC.

WATER PURIFICATION PLANTS DESIGNED
INSTALLED *and* GUARANTEED
CLAYTON, NEW JERSEY

NEWS ABOUT MEN

William Whitman, Jr., has been elected president of Nashawena Mills, New Bedford, Mass., succeeding William Gardner, who died recently. **Andrew W. Macy** has been appointed agent in full charge of the manufacturing and merchandising activities of the corporation. **J. Earle Parker,** of Boston, clerk of the corporation, has been appointed treasurer. These last two men succeed to functions previously exercised by the late Mr. Gardner. Mr. Macy has been general superintendent for nearly four years.

Dr. Camille Dreyfus, president of Celanese Corp. of America, New York, has been elected to membership in the American Association for the Advancement of Science, due to his pioneering in the commercial development of cellulose acetate here and abroad in textiles and plastics.

W. A. Brownlee, of Columbia (Pa.) Lace Co., was elected president of the National Association of Lace Curtain Manufacturers at the annual meeting of that body held recently in New York, **Charles F. Bromley, Jr.,** Quaker Lace Co., Philadelphia, was elected vice-president.

F. M. Kimble, Jr., has been elected president of the Mandeville Mills, Carrollton, Ga., succeeding the late J. A. Mandeville. Mr. Kimble has been with the firm for 16 years and manager for the last eight years. **J. A. Eycock** was made general manager and **J. R. Newell** treasurer.

H. G. Nichols and **H. M. Simonds** have resigned as vice-presidents of Pacific Mills, Boston, Mass.

John H. Garand, head engineer of ordnance at the Springfield (Mass.) Armory, was recently awarded the Holley medal by the American Society of Mechanical Engineers for the invention and development of the semi-automatic rifle which bears his name and is an outstanding contribution to our national defense. His first job after leaving school at the age of 12 was in a cotton mill at Jewett City, Conn., where he invented a mechanical device for painting the tips of bobbins to replace the former time-consuming hand operation.

Fred Symmes, president of Union Buffalo Mills, Union, S. C., and a former president of American Cotton Manufacturers' Association, has been added to the National Cotton Council's committee on scientific research for uses of lint cotton.

Fuller E. Callaway, Jr., president of Callaway Mills, LaGrange, Ga., recently announced a donation of $190,000 to the board of education of the city of LaGrange, the money to be used immediately for the building of new school facilities in the southwest LaGrange community, and for the improvement of existing equipment.

Thomas J. Wallner, Pulaski, Va., president of Wallner Associated Hosiery Mills, was elected president of the Southern Industrial Council.

H. A. Hatch has been elected president of the Abbeville (S.C.) Cotton Mills.

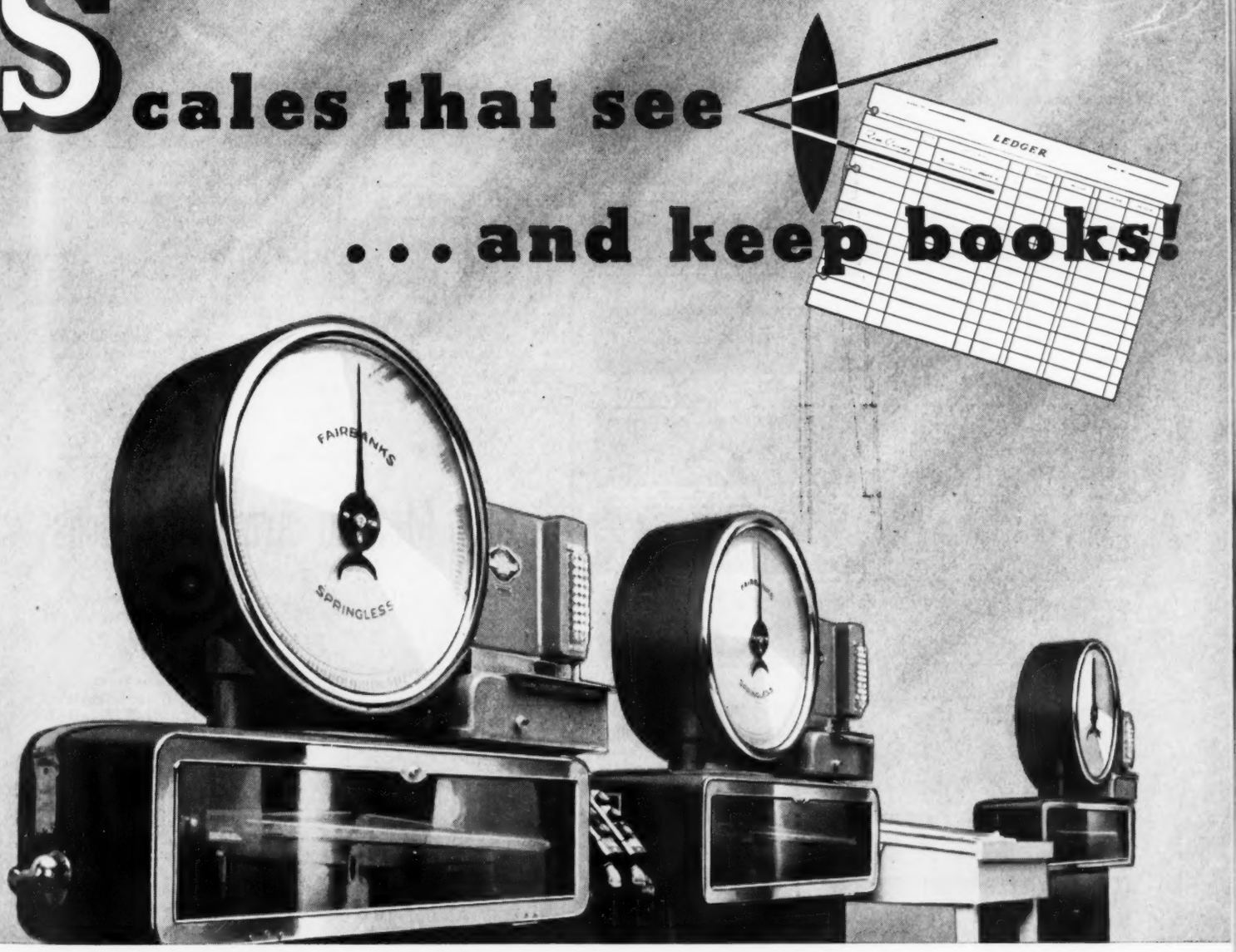
J. F. Barnwell is a newly elected vice-president of Abbeville (S.C.) Mills.

Martin H. Horschler, of William Whitman Co., New

Fay Foto Service

MOSES PENDLETON (left), president of American Woolen Co., at the formal opening of the company's new Boston offices at 38 Chauncey St. early last month. Facing him are four wool buyers of the company — (left to right) F. H. Paige, R. H. Harris, L. J. Ashworth, I. C. Austin.

Scales that see ... and keep books!



IT costs money to be inaccurate with "tonnage"—and it costs more money to be s-l-o-w.

In one of the most modern coal preparation plants in the world, Elkhorn Coal Company, Wayland, Ky., you will find a battery of the most modern scales handling "tonnage" at high speed.

These Fairbanks Scales with "electric eyes" shut off flow to hoppers automatically when the pre-set weight is obtained. A printed record is made of each operation automatically, and an ingenious keying system credits the tonnage to the man who mined it.

To make errors in weighing well-nigh impossible, to fit weighing speedily into the production flow, to protect alike the buyer, seller, and all whom weighing affects is the aim of this, the most experienced and most modern organization of scale makers.

There are Fairbanks Scales in types for your every weighing need... and Fairbanks Scale Engineers are available at your call.

Fairbanks, Morse & Co., Dept. A-204, 600 S. Michigan Ave., Chicago, Illinois. Branches and service stations throughout the United States and Canada.

We Want To Help You

It is our desire to do everything we can to aid in the speed-up of American production. Our scale engineers can possibly suggest new and more efficient use of your present scales or modification which will expand their capacity.

FAIRBANKS·MORSE SCALES

DIESEL ENGINES ELECTRICAL MACHINERY RAILROAD EQUIPMENT WASHERS-IRONERS STOKERS
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"INDEX" To Better Quality Textiles

FOR	Dyeing Flameproofing	USE SOLVAY AMMONIUM CHLORIDE
FOR	Dyeing	USE SOLVAY CAUSTIC POTASH
FOR	Dyeing Hypochlorite bleaching Kier boiling Mercerizing Neutralizing	USE SOLVAY CAUSTIC SODA
FOR	Hypochlorite bleaching Oriental rug finishing Water conditioning	USE SOLVAY LIQUID CHLORINE
FOR	Mothproofing	USE SOLVAY PARA-DICHLOROBENZENE
FOR	Dyeing Softening	USE SOLVAY POTASSIUM CARBONATE
FOR	Acid neutralizing Degumming Fulling Scouring Soap building Softening	USE SOLVAY SNOWFLAKE CRYSTALS
FOR	Acid neutralizing Fulling Hypochlorite bleaching Kier boiling Scouring Soap building Water conditioning	USE SOLVAY SODA ASH
FOR	Dyeing	USE SOLVAY SODIUM NITRITE
FOR	Acid neutralizing Degumming Fulling Scouring Soap building Softening	USE SOLVAY TEXTILE SODA

FOR TECHNICAL SERVICE In the Solvay Laboratories, textile men with years of experience study your problems and make recommendations on the basis of laboratory findings. *Solvay will be glad to send these textile specialists into your plant to study actual operating conditions and help adapt laboratory findings to specific plant conditions.* Write today to

SOLVAY SALES CORPORATION
Alkalies and Chemical Products Manufactured by The Solvay Process Company
40 Rector Street • New York, N. Y.

NEWS ABOUT MEN

York, has been elected president of Woolknit Associates, Inc., succeeding **Neil MacLellan,** of American Woolen Co., who had accepted a vice-presidency.

F. G. Kingsley has been appointed vice-president and director of merchandising of Deering, Milliken & Co., New York.

Arthur W. Sandak, of Mainzer Minton Corp., New York has been re-elected president of the Allied Textile Association, New York.

August W. Kops, of E. F. Hutton & Co., New York, was reelected president of the Textile Salesman's Association at its annual meeting last month. **Mortimer J. Carrigan,** of L. & E. Stirn, Inc., was elected first vice-president.

William F. C. Ewing, first vice-president of Alexander Smith & Sons Carpet Co., Yonkers, N. Y., has been appointed consultant on floor coverings to the textile clothing and equipage branch of the purchases division of the OPM, Washington.

Alexis Sommaripa, of the Rayon Division of E. I. du Pont de Nemours & Co., New York, is associated with OPM in civilian allocation work.

Irving Squires, vice-president of Cohen, Goldman & Co., New York, has been appointed consultant on clothing for OPM, Washington.

Dan A. West, prominent in the chain store food business on the Pacific Coast, has been appointed deputy director of the Consumer Division of OPA.

Textile Men in Armed Services

W. L. Hicks of the Textile School of Clemson (S.C.) College is serving a year of active duty as a 1st Lieutenant with the Army Quartermaster Corps, Orlando (Fla.) Air Base. His place is being filled by **E. P. Ward,** Clemson textile graduate of 1937, who spent one year with Ciba Co., New York, and since that time has been with Gregg Dyeing Co., Graniteville, S. C.

Robert A. Morgan, president of Morgan Mills, Rome, Ga., has been called to active service. He will be plant manager for the Arkansas Ordnance Plant in Little Rock, Ark.

Capt. Dwight Wilhelm, who has been secretary of the Alabama Cotton Manufacturers Association, is now in the Army in charge of public relations at Maxwell Field, Montgomery, Ala., headquarters of the Southeastern Air Corps Training Center.

George Izon, sales manager of Hartford Rayon Corp., New York, will join the Chemical Warfare Section of the U. S. Army this month. He will be succeeded by **Frank A. Tupper, Jr.,** recently with Lorraine Mfg. Co., acting in association with **Charles Fowler,** executive vice-president of the company who will now spend more of his time at the New York office.

Leonard Silberberg of Eagle Fabrics Corp., New York is a private in field artillery, now located at Fort Knox, Ky.

James C. Self, Jr., formerly associated with his father in the Greenwood and Matthews Cotton Mills, of Greenwood, S. C., is now a lieutenant with the Army at Camp Davis, S. C.

Maclean Williamson, on leave from the Viscose Process Sales Department of American Viscose Corp., New York, has been commissioned a lieutenant in the Army.

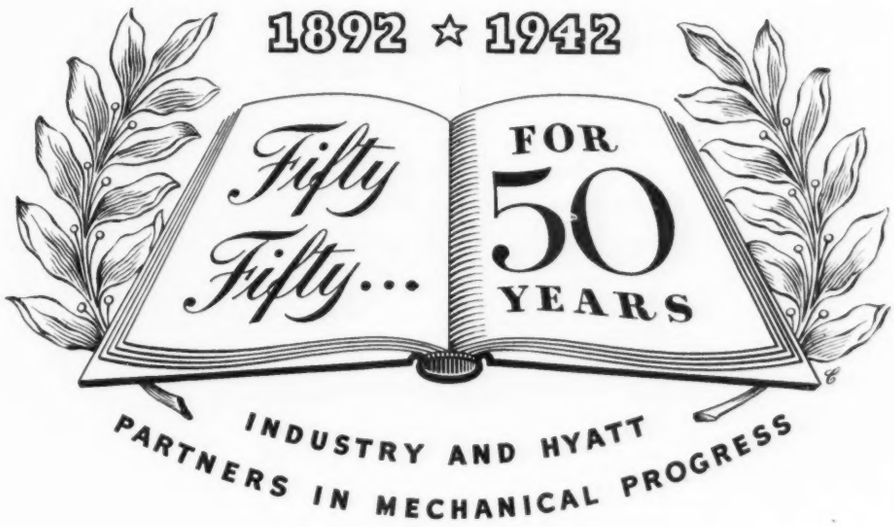
Thomas C. Scaffe in charge of textile sales for Gulf Oil Co. at Spartanburg, S. C., for last 8 years, has recently been called into service and is now stationed at the U. S. Naval Academy at Annapolis where he is teaching steam engineering. Lieutenant Scaffe graduated from the Academy in the Class of 1918, served through the World War I and remained in the service for ten years.

Arthur Cottingham, son of A. H. Cottingham, general manager of Victor-Monaghan Co., Greenville, S. C., is now on duty as a lieutenant in the U. S. Coast Artillery in Hawaii.

Lieut.-Col. Charles R. Baxter, Charlotte, N. C., retired army officer, works manager of The Kendall Co., Paw Creek, N. C., has been recalled to active service by the War Department.

Berkshire Knitting Mills, Reading, Pa. in the December, 1941 issue of "The Yarn Carrier" lists 185 former employees who are serving in the Army, the Navy and the Marine Corps. The Textile Machine Works lists 86 such men, and the Narrow Fabrics Corp., eleven.

THANKS, INDUSTRY!



WE'VE COME A LONG WAY TOGETHER during the past fifty years. We've helped America through emergencies . . . and through the greatest industrial era in her history. We've brought the advantages of anti-friction roller bearings to the many new and perplexing mechanisms of industrial pioneers. The accomplishments have been great, the rewards rich . . . for Industry, for Hyatt, for America!

Inventive genius and engineering talent have guided us through the years . . . the experiences of one have helped and improved the other. Many design problems have been solved. Many application handicaps have been overcome. We've shown each other many new, better ways of doing things.

Today, on our 50th Anniversary, we feel gratified that you are placing Hyatts in machinery and equipment of all kinds...in factory and field, on highway and railway, in war and peace-time assignments . . . that you are calling upon Hyatt and Hyatt Roller Bearings, more than ever before, to help in upholding the excellence of your regular products and the products you are building for Victory.

For this confidence, again we say . . . THANKS, INDUSTRY. Hyatt aims to keep pace with you into the future—America's future—building the very best that seasoned experience and fresh imagination can produce. So let's set our sights on tomorrow . . . let's keep going "Fifty-fifty for 50 years" . . . and more!

Hyatt Bearings Division, General Motors Corporation, Harrison, N. J., Chicago, Pittsburgh, Detroit and San Francisco.

HYATT

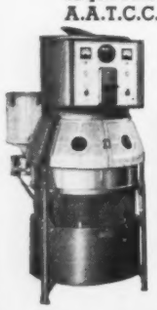
QUIET ROLLER BEARINGS

All Out Defense AGAINST INFERIOR SUBSTITUTES

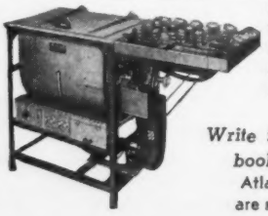
Substitutions can't be avoided these days. In many cases it's that or nothing. But you, as a buyer, must know how these substitutes will stand up. Perhaps they're just as good as the original — but your reputation demands that you be certain.

ATLAS OMETER TESTS Give you the facts

Atlas **FADE-OMETER** will show you within a few days the effects of June sunlight on colors and fabrics. And so accurate and dependable is this test that it meets the requirements of the U. S. Bureau of Standards and the A.A.T.C.C.



Atlas **LAUNDER-OMETER** reproduces the effects of months of commercial launderings on colors and textiles, and their reaction to soaps and detergents. It has been adopted as standard by the A.A.T.C.C.



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395 W. SUPERIOR ST., CHICAGO, ILL.

MEESE, INC.
Madison, Ind.

NEWS ABOUT MEN

AT RECENT DINNER of the National Consumer-Retailer Council in New York, F. S. Blanchard (left), on leave from Pacific Mills to serve with the office of Production Management; H. W. Brightman (third from left), vice-president of L. Bamberger & Co., and Frank H. Mayfield (right), president of Scruggs-Vandervoort-Barney, Inc., chat with Mrs. Harriet Elliott, then head of the Consumer Division of the Office of Price Administration. Mr. Mayfield presided at the dinner; the other three together with Donald Nelson, head of SPAB, were the speakers. A large representation of the New York textile trade was among the 1300 guests.

Peter P. Hagan, president of Charles P. Cochrane Co., Philadelphia, was re-elected chairman of the board of trustees of the Institute of Carpet Manufacturers of America for 1942 at the annual meeting Dec. 17, in New York. New members of the board elected for three-year terms are: **M. Karagheusian,** president of A. & M. Karagheusian, Inc.; **Frederick B. Klein,** president of Alexander Smith & Sons Carpet Co., and **James G. Law,** vice-president of Magee Carpet Co. **Leroy A. Beers** was re-elected president of the Institute for 1942. **King Hoagland** was elected secretary and treasurer.

Harry Kratzer has been appointed special representative for Rollins Hosiery Mills among leading department stores in the following centers, effective Jan. 1: Philadelphia, Pittsburgh, Washington, D. C., Baltimore, Cincinnati, Cleveland, Columbus, Dayton, Toledo, Louisville, Indianapolis, and Detroit. Mr. Kratzer was for many years with Julius Kayser & Co., and more recently with the Smart Set Glove Co., New York.

Louis F. Hall, president of Sanco Piece Dye Works, Inc., Garnerville, N. Y., was guest of honor at a dinner given by his employees on the occasion of his birthday Dec. 13. Over 350 attended. **Albert Sands,** treasurer of Sanco, presented Mr. Hall with a desk set on behalf of his friends and employees. Mr. Hall has been head of Sanco for the last four years, and active in the textile field for many years, being a founder of the firm of Cohn Hall Marx Co., New York.

Raymond H. Fogler, president of W. T. Grant Co., New York, has been chosen general chairman of the merchandise division in the drive for the sale of defense bonds. **W. Ray Bell,** president of the Association of Cotton Textile Merchants of New York, is now chairman of the cotton goods division.

Arthur F. Black, Charlotte, N. C., for the last year southern manager of Textile Finishing Machinery Co., has been appointed production and inventory analyst for the priorities field service of OPM. He will be attached to the Charlotte office, of which J. E. MacDougall is manager.

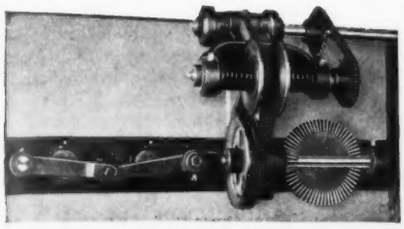
York L. Wilson, formerly president and treasurer of Red River (S.C.) Cotton Mills, and more recently cotton manufacturer and broker of Oakland Plantation, Beaufort, S. C., has been appointed by OPA as chief of the textile and leather goods section of the Division of Accounting.

A. T. Greene, secretary and assistant treasurer of Drayton (S.C.) Mills, has been appointed Spartanburg, S. C., chairman of the National Committee of Conservation of Manpower in defense industries.

Miss Harriet Elliot and **Dr. Mabelle Blake** have been made members of the advisory council in Consumer Division, OPA.

Frank S. McCall, chief chemist at Ford Laboratories, Richmond Hill, has been made technical director of Herty Foundation Laboratories, Jacksonville, Fla., to succeed **Wil-**

Now . . . YOU CAN PIECE CARBONIZE WITH CONTROLLED TENSION AND WITH NO LOSS IN WIDTH OR WEIGHT . . .



PATENTED HUNTER RANGE DRIVE

ILLUSTRATION shows new development which holds predetermined tension on cloth from time it enters until it leaves the unit. Here are the important aids it gives to the salability of your fabric:

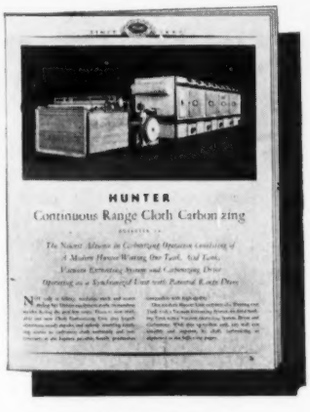
(a) Uniform tension on goods throughout unit.

(b) Complete elimination of impaired tensile strength.

(c) Complete protection against streakiness and marked surfaces on face finished goods.

(d) No tendering of cloth on seams or anywhere in piece.

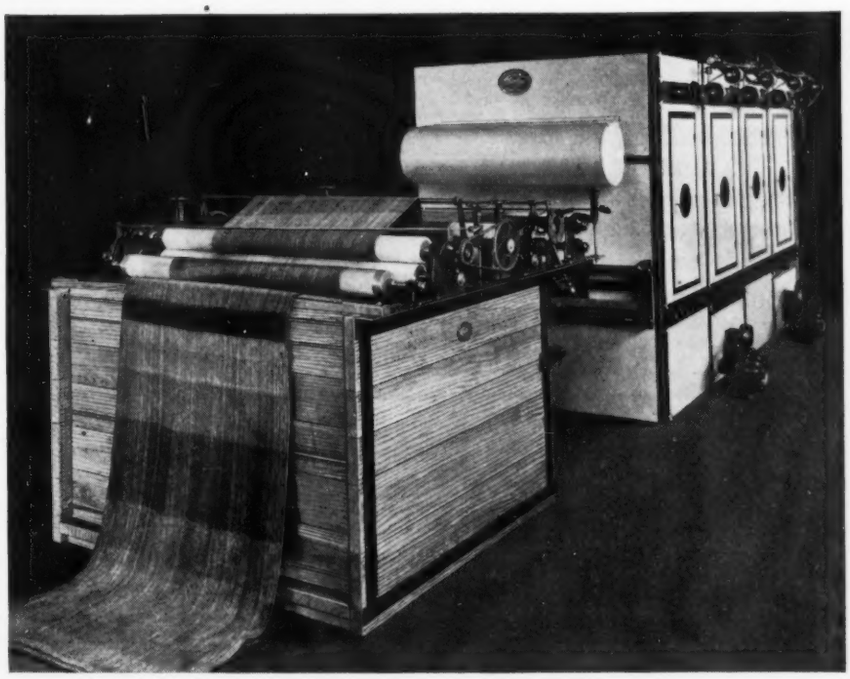
(e) Absolute guarantee against building up of slackness and further risk of damage.



BULLETIN CC

THIS 8 page bulletin is copiously illustrated, gives detailed operating information and is supplemented by two valuable technical papers. Write for it today.

HUNTER offers the newest advance in carbonizing equipment with performance pretested and production guaranteed and costs determined before you install the equipment.



This modern Hunter unit consists of a Wetting-Out Tank with a Vacuum Extracting System, an Acid Soaking Tank with Pneumatic Squeeze Rolls, Dryer and Carbonizer. All Hunter drying equipment is sold under a production guarantee based on laboratory or field tests and backed by wide experience of practical drying. Not only do you take no risk, but every Hunter Unit is designed to the individual conditions in the customer's own mill, including character of cloth and all other essential details. Write today for Bulletin CC and complete information of the interesting proposal Hunter is prepared to offer you.

JAMES HUNTER MACHINE COMPANY

FOUNDED 1847 • NORTH ADAMS, MASSACHUSETTS

Western Representative: **E. G. PAULES, 343 Bendix Bldg., Los Angeles, Calif.**

The New Stokes Fibre Cutter

•

Makes 500 to 20,000 knife cuts per minute

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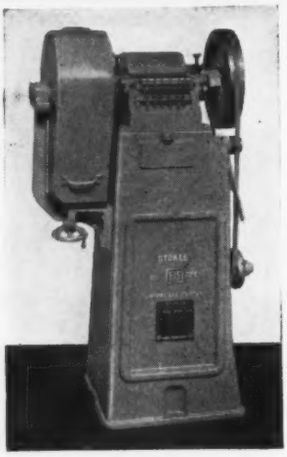
Handles 4 to 8 tops, or equivalent, simultaneously



Model 72 E is an improved machine, more productive and economical, for cutting rayon, wool, cotton, silk, flax and other fibres, wet or dry.

Choice of four rotary cutter heads, readily interchangeable, produces a full range of fibres, from flock to 8" lengths.

Variable speed drive with synchronized feed is instantly adjusted while operating, for length of cut desired or type of material.

Features include Self-sharpening Knives; Tension Release for feed; Clutch for quickly stopping feed rolls; Balanced Heavy-duty Cutters, ball bearing mounted; many other improvements.

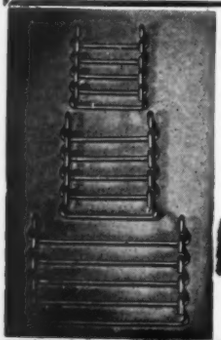
Write for Bulletin 42 FC.

F. J. STOKES MACHINE COMPANY

6004 Tabor Road—Olney P. O. Phila., Pa.

F.J.Stokes FJS Est. 1895

OPPORTUNITIES TO IMPROVE YOUR PRODUCT AND SAVE YOUR MONEY . . .



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Accurately made from high grade material—built to last and to hold its shape.

SINKER HEAD SLOT CUTTERS

The ideal tool for cleaning out slots in sinker and divider heads. Made in all gauges. Each one comes in a leather carrying case.

Send for bulletin giving full details on these and other products.

THE SINKER WITH THE HARDENED THROAT PATENTED AND THE HARD BUTT

GIVES YOU..

ESS BREAKAGE
ONGER SERVICE
OWER OPERATING COST
ONGER UNIFORMITY OF PRODUCT

THOMAS & SKINNER
STEEL PRODUCTS COMPANY

1119 East 23rd Street Indianapolis, Indiana

NEWS ABOUT MEN

liam F. Allen who goes with A. E. Staley Mfg. Co., Decatur, Ill. Mr. McCall had previously been with Herty Laboratories.

Samuel Agar Salvage has been knighted by King George VI as Knight Commander of the Order of the British Empire, as a climax to a career of service not only to Great Britain and the United States but to the textile industry. Sir Samuel has long been recognized as having fathered the American rayon industry, and was for many years active head of American Viscose Corp.

Miss Kathryn Day has been appointed promotion director of the Butterick Co., New York, with headquarters at 161 Sixth Ave. She will aid in developing cooperation between fabric houses and retail stores. Miss Day was formerly with the Rayon Institute and the Durene Association of America and recently was director of advertising and promotion for the U. S. Finishing Co.

James H. Bunting, who headed the designing department for Susquehanna silk mills for 27 years, has joined the Cravat Department of Cheney Bros., New York, as head designer.

Frank E. Rowe, Jr., who recently resigned as chief technician of Springs Cotton Mills, with units in several South Carolina towns, has become chief maintenance engineer and technical superintendent of Riverside & Dan River Cotton Mills, Danville, Va.

Morris S. Rosenthal, former vice-president of Stein, Hall & Co., Inc., New York, has been appointed assistant director in charge of post-war planning and acting chief of the European and African divisions of the Economic Defense Board, Washington, D. C.

Herbert K. Webb, of Charles J. Webb & Sons, Philadelphia, was master of ceremonies at the annual dinner of the Philadelphia Wool & Textile Association at the Penn Athletic Club on Dec. 6. Over 600 attended the dinner.

Burnet Valentine has resigned from Pepperell Mfg. Co., New York, to join the organization of A. D. Juilliard & Co., as merchandiser of the firm's cotton goods division.

Arthur Stephens has been elected president of the Hosiery Mill Representatives Club, of Chicago, succeeding **George Moeller.**

Francis J. McKenna, manager of the 320 Broadway Branch of the Chemical Bank & Trust Co., has become assistant treasurer of A. D. Juilliard & Co., New York.

WILLIAM H. RUFFIN, president of Erwin Cotton Mills Co., Durham, N. C., who was elected president of the North Carolina Cotton Manufacturers Association at the fall meeting at Pinehurst, N. C.

Raymond K. Briden, formerly with Lorraine Mfg. Co., has joined Deering, Milliken & Co., New York to specialize in the development of spun rayon, continuous filament rayon fabrics and cottons. He succeeds **Fred Garlington,** who has become superintendent of Abbeville (S.C.) mill.

Henry W. Steele, for the last few years with the New York office of Callaway Mills, has resigned and joined Dana M. Martin Co., New York.

Dr. Harold H. Tucker has been appointed director of research of John B. Stetson Co., Philadelphia.

L. C. Harvey has been appointed Chicago Office manager for Alexander Smith & Sons Carpet Co., succeeding **Alex Wallace,** resigned.

T. Henry Wood, general manager and superintendent of Oconee Mills, Westminster, S. C., is the newly elected mayor of Westminister.

Howard Wolfe, vice-president of Philadelphia National Bank spoke recently before the faculty and students of the Philadelphia Textile School on "Commercial Banking."

Carroll J. Dare has joined the sales force of Riverside & Dan River Cotton Mills, New York, having resigned from the Pelzer Division of Kendall Co.

Eldon Stowell has resigned as assistant to **George L. Storm** in the acetate rayon sales department of American Viscose Corp., to join Tubize Chatillon Corp. as assistant to **Norman B. Richardson** in the sales service department.

William Streuli, after 22 years with Hara & Co., raw silk importers, New York, has joined the Atwater Division of Hess, Goldsmith & Co.

Royal C. Murray has re-

A GOOD FINISH REQUIRES

A GOOD START . . . .

THAT'S why it pays to use FULLITIN which is in a class by itself as a fulling agent. Its mild, mellow action quickly saponifies oil, grease and dirt, preventing wrinkles of all kinds, stuck places and whiplashes. Used with alkali only it does a quicker and better job than soap and eliminates the lengthy soap boiling operation. Used with soap in any proportion it prevents congealing, thus permitting the use of stone cold soap and preventing many troubles that hot soap causes.

SCOUROLAN — A Fitting Companion of FULLITIN

Added to soap in the washer it searches out oil, dirt and grease that soap alone would fail to lift and takes them off with the rinse. Its efficiency reduces perching time and allowances for spots, which account for almost 50% of claims. It may be used COLD for scouring stock dyed or yarn dyed fabrics and eliminates streaks and clouds in piece dyeing, promoting bright, snappy shades, clean gummyless handle and absence of disagreeable odors.

Write for circular—How BISCHOFF Aids the Textile Finisher.

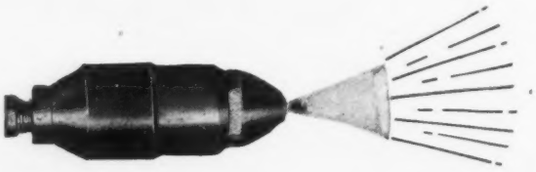
ERNST BISCHOFF COMPANY, Inc.

Founded 1908 • IVORYTON, CONN.

FULLITIN

FOR PERFECT FULLING

NOW MORE THAN EVER



The Rihco Type B Atomizer

Today, the goal of every mill is maximum production with lowest waste. Material must be conserved, schedules maintained with highest efficiency.

A Rihco system of Type B atomizers boosts production, gives just the right humidity conditions, and does this at lower cost than ever before, because the Rihco principle of operation is based on a different way of vaporizing water, a way that requires far less air, far less initial equipment to obtain the same results.

R. I. Humidifier & Vent. Co.

Humidifiers Since 1912

99 CHAUNCY ST., BOSTON, MASS.

Aldrich Machine Works, Greenwood, S. C. — V. L. Sanderson, 1710 Walnut St., Philadelphia, Pa.

"Our Beam Blowing Cut from 50% to 2%"

That's the report from one of the many mills that have adopted

STANZOLENE

Not only does this new formula practically eliminate blow-outs on both sulphur and direct color beam dyeing but results in a much more even distribution of clean dyed yarn without smudges. Equally fine results have been shown on packaged goods. . . . Write today for complete details and a working sample to prove our claims to your own satisfaction.

OTHER HIGH GRADE "STANDARD" PRODUCTS
Stanso Palm Oil Curd Soap, Etc.

Standard Soap co. of camden

Charlotte, N. C. — CATO M. LITTLETON, 426 PARK TERRACE
205 South 2nd St., Camden, N. J.
Woonsocket, R. I. — G. TANGUAY, 281 HARRIS AVE.

NEWS ABOUT MEN

signed as sales manager of the Packaged Goods Department of Iselin-Jefferson Co., New York.

W. M. Radliffe, Jr., president of the Guadalupe Valley Cotton Mills, Cuero, Tex., has taken over active management of the plant following the death of R. B. McMahon, manager for many years.

Sid Haber, after seven years in business on his own account, has rejoined the Blue Bird Silk Mfg. Co., New York, in capacity of sales manager.

Frank L. Byrd has resigned as research engineer of Springs Cotton Mills, Plant No. 1, Fort Mill, S. C., to become lubrication engineer for both divisions of Riverside & Dan River Cotton Mills, Danville, Va.

R. A. Field, Jr., formerly with Riverside & Dan River Cotton Mills, Danville, Va., and Newnan (Ga.) Cotton Mills, is now Inspector of Textiles of Lend-Lease Purchases, U. S. Department of Treasury, for Georgia, Florida, North and South Carolina, with office at Atlanta, Ga.

Herbert E. Hand, personnel director of Chicopee Mfg. Co., has been appointed secretary of the Fair Rent Committee in Manchester, N. H.

Paul Gray has become superintendent of mechanical department, Williamston (S.C.) plant of Gossett Mills.

J. L. Brannan, formerly overseer of carding and spinning of Panola Mills, Greenwood, S. C., is now superintendent of Courtenay Mfg. Co., Newry, S. C.

O. A. Sullivan has resigned as superintendent of Jennings Mills and Mansfield Mills, Lumberton, N. C., and become superintendent of Hartwell Mills No. 2, Toccoa, Ga.

W. E. Gantt has resigned as overseer of cloth room of Dover Mill Co., Shelby, N. C., and has accepted a similar position with Springs Cotton Mills, Lancaster, S. C.

A. B. Fletcher has accepted position of overseer of weaving at Chadwick-Hoskins Mill No. 5, Pineville, N. C. He formerly held a similar position with Industrial Cotton Mills, Rock Hill, S. C.

W. R. Thomason has been promoted to general superintendent of Palmetto (Ga.) Cotton Mills, Inc.

Howard L. West has resigned as second hand of carding of Springs Cotton Mills No. 1, Fort Mill, S. C., to become overseer of carding, Drayton Mills, Spartanburg, S. C. He is succeeded at Fort Mill by **Leitner S. Shaw.**

CHARLES F. NORTHEN, JR., recently elected a vice-president of Avondale Mills, Sylacauga, Ala., in charge of yarn sales.

JOHN W. SOLOMON, recently elected vice-president of Avondale Mills, Sylacauga, Ala., in charge of fabric sales.

J. Cranston Gray, formerly of Goodyear Decatur (Ala.) Mills has joined Barnes Textile Associates Inc., Boston, Mass., as consulting engineer. Mr. Gray was a special student at M.I.T. in Industrial Engineering, and for a short time an assistant professor there.

Paul B. Hutchinson has been promoted to second hand of carding at Goodyear Decatur (Ala.) Mills.

J. W. Cox has become superintendent of Alabama Mills, Inc., Aliceville, Ala., plant.

J. F. Brasch, Jr., formerly of Graniteville, Ga., has accepted the superintendency of Habersham (Ga.) Mills.

C. D. Morris has become superintendent of Palmetto (Ga.) Cotton Mills, Inc.

J. W. Webb, formerly of Shelby, N. C., has become superintendent of Dora Yarn Mill Co., Cherryville, N. C.

J. B. Cook has been promoted to overseer of the slashing department of Bibb Mfg. Co., Columbus, Ga.

W. N. Scroggins, formerly of Vaucluse, S. C., has become overseer of weaving at Alabama Mills, Inc., Aliceville, Ala.

DEFENSE MUST BEGIN SOMEWHERE

• Defense, like every other dynamic force, has a beginning — a center at which energy is generated.

In the execution of modern warfare there is no activity so basic as the work of a chemical laboratory.

Chemistry is the beginning of the business of transforming raw materials into explosives, into planes, into ships, into trucks, and into tanks.

Michigan Alkali Company manufactures many products used in our war effort. Chlorine and chlorine derivatives are being used for smoke screens, anti-freeze, high-octane-rating gasoline, wire insulation, synthetic rubber, plastics, paper and many other vital products used by our armed forces and those of our allies.

Soda Ash is used in the manufacture of aluminum, glass, steel, textiles, leather and explosives.

Caustic Soda has an important function in the processing of gun cotton and textiles.

Many other Michigan Alkali Products also aid America daily in producing materials needed by the free peoples of the world.

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FORD BUILDING • DETROIT, MICHIGAN

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DISTRIBUTORS IN ALL PRINCIPAL CITIES

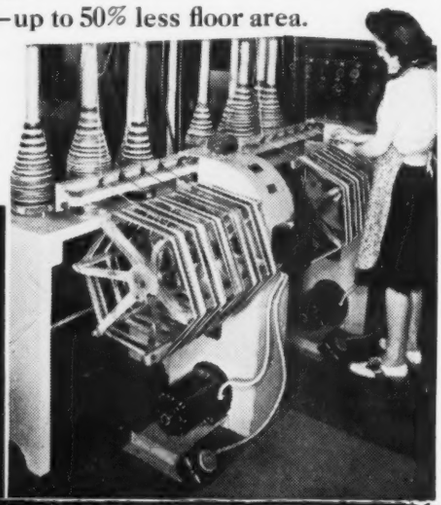
MANUFACTURERS: SODA ASH • CAUSTIC SODA • BICARBONATE OF SODA • CHLORINE • CALCIUM CARBONATE • DRY ICE

Faster Skein Reeling plus Savings with FIDELITY TWIN-UNIT SYSTEM

Five Outstanding Advantages:

1. Easier, lighter work for operator—no high lifting.
2. Greater output per hour—30 to 50 seconds doffing and clipping cycle.
3. Close control of skein weight and yardage.
4. Greater flexibility for changes in production, dye lots, yarns, etc.
5. Space saving—up to 50% less floor area.

These five and ten more advantages described in Bulletin 3909 on FIDELITY Skein Reeling Machines. Write for it.



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We are anxious to supply all customers promptly; but, like you, we are 100% for the war program and if you have government contract numbers, please do not fail to supply them with your order to facilitate our meeting your emergency needs quickly.

3-Bar Leyland Mycock Regulating Rubber-Covered Expander for Wide Goods

Thomas Leyland Machinery Co., Inc.
Readville, Mass.

Obituary

William B. Gardner, 68, president and treasurer of the Nashawena Mills, New Bedford, Mass., died in New York Dec. 14 while on a business trip. He was superintendent of the wool top department of Arlington Mills in 1907 and became treasurer of Nashawena in 1909. He was president of two banks and a director of another.

Robert R. Ray, 89, industrialist, died at his home in Gastonia, N. C., Dec. 10. He went to work in the old Mountain Island Cotton Mills in 1882. Two years later he was transferred to McAdenville, N. C. where he remained for 53 years, most of the time as treasurer and general manager of the plant. For 17 years Mr. Ray was president of the Gaston County Cotton Manufacturers Association, forerunner of the Southern Combed Yarn Spinners Association. He was also a former president of the North Carolina Cotton Manufacturers.

Henry Fries Shaffner, 74, president of Oakdale Cotton Mills, Jamestown, N. C., died Dec. 3. He was chairman of board of Wachovia Bank & Trust Co., of Winston-Salem.

Buell Havens Heminway, Jr., 46, Madison, Conn., silk manufacturer and former president of Heminway & Bartlett Co., Watertown, died Dec. 8.

John Fisler, 82, president of Yewdall & Jones Co., Philadelphia, and chairman of the board of George Mabbett & Sons Co., Plymouth, Mass., died in Philadelphia Dec. 22. He was an organizer and five times president of the Manufacturers' Club of Philadelphia.

William A. Holton, 79, founder of the Chipman-Holton Knitting Co., Ltd., Hamilton, Ontario, died late last month. Until recent retirement he had been president of the company.

A. K. Buhl, 82, owner and founder of the Empire State Silk Label Co., New York, died early last month.

Abraham Edelstein, 62, retired silk manufacturer, who had been president of the Paxinosa Silk Co. prior to 1929, died at his home in Scarsdale, N. Y., Nov. 30.

Samuel O. Stevenson, 71, for the last 24 years sole selling agent of the Columbia Woolen Mills, Columbia City, Ind., died Dec. 13. He was also vice-president of the company.

John V. Sinsabaugh, 70, former partner in Pearsall's News Agency, New York, died Dec. 15. He retired five years ago after over 35 years in commodity news reporting. For many years he wrote the raw-cotton reports published in TEXTILE WORLD.

Leighton G. Haight, 62, veteran knit goods salesman, and for the last nine years with C. C. Valentine & Co., New York, died Dec. 23.

Joseph B. Eldredge, 75, manufacturer of bobbins at Waterbury, Vt., died recently.

Charles E. Leinbach, 77, Reading, Pa., died Dec. 23. He had retired from G. Leinbach Co. two years ago after a lifetime with that company.

Benjamin Russell, 65, president of Russell Co., Alexander City, Ala., died suddenly Dec. 16. He was president of the Alabama Cotton Manufacturers Association. Mr. Russell organized a wide variety of companies in his neighborhood.

James A. Branegan, 70, president of Kali Mfg. Co., Philadelphia, died Dec. 23. He was for 25 years with General Chemical Co. prior to 1914 when he founded the Kali firm of which he was president for many years.

William W. Quinton, 59, of Pawtucket, former textile executive, died on Dec. 4. He had been superintendent of Nashua (N.H.) Mfg. Co., agent of Lockwood Co., Waterville, Me., general manager of Manville Jenckes Co., Pawtucket, and of Stevens Mfg. Co., Fall River.

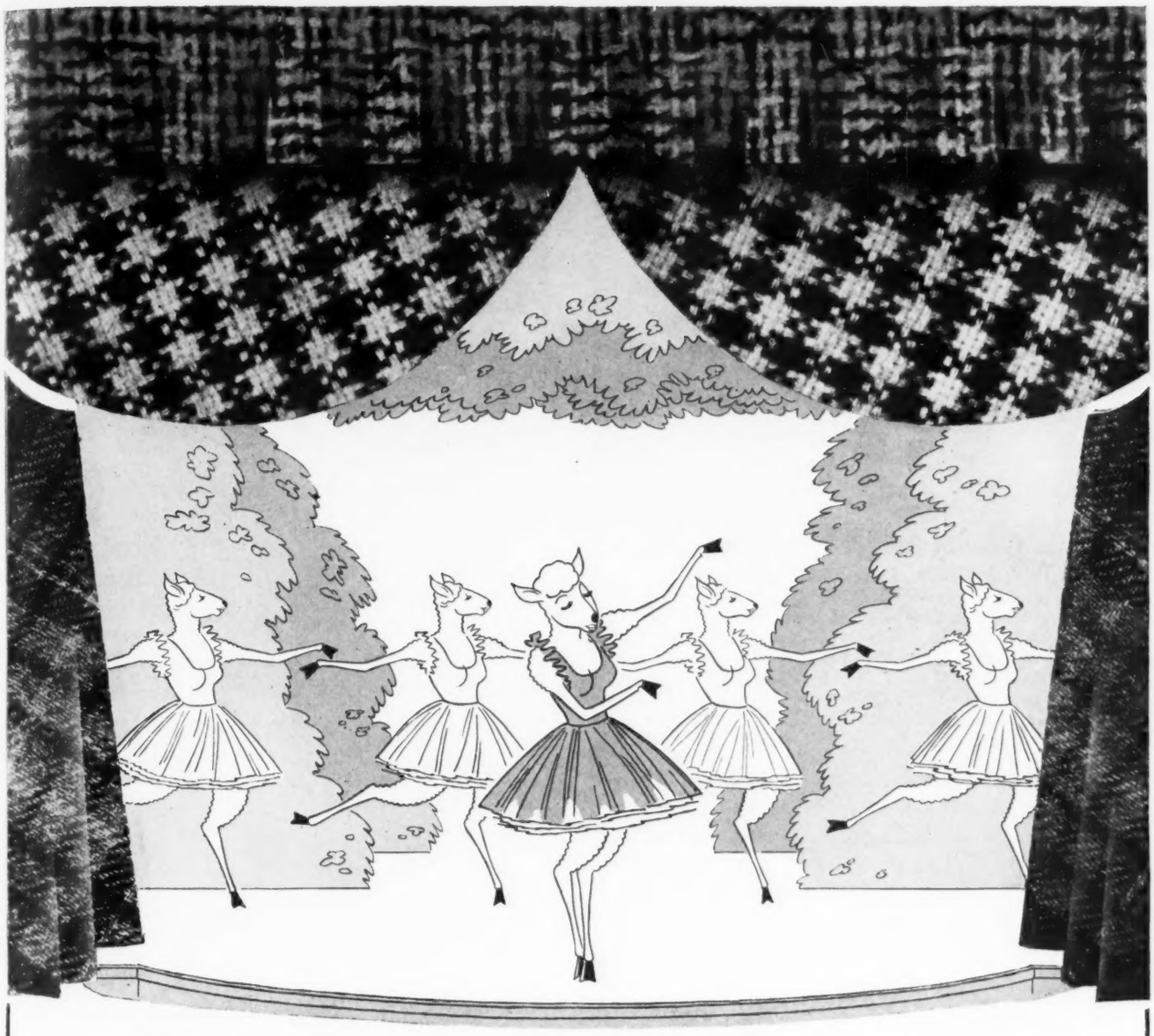
Frederic Beggs, president of Empire Piece Dyeing & Finishing Co., Paterson, N. J., died last month.

Rowland B. Jacobs, 72, treasurer and manager of Everett Knitting Works, Lebanon, N. H., many years ago, and a former president of the New Hampshire Manufacturers Association, died recently.

Fritz S. Stern, 54, president of the Great American Hosiery Mills, Bechtelsville, Pa., since 1910, died suddenly in New York, Dec. 2.

F. M. Ainsworth, general manager of Gonzales (Tex.) Cotton Mills, died last month.

M. W. Gilmer, 58, for 24 years master mechanic and head of the electrical department of Anniston (Ala.) Mfg. Co., died recently.



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PROCTER & GAMBLE

Offices and warehouses in principal cities
General Offices—Cincinnati, Ohio

You can count on outstanding performance when you use Olate in your fulling and scouring operations.

This pure, neutral, low titer soap has the excellent lubricating properties so important in the safe processing of woolens and worsteds. It has the detergency necessary for loosening the oils and dirt present in these fabrics. And the emulsifying qualities so essential in maintaining these impurities in suspension or dispersion until they can be flushed thoroughly from the fibers.

EXCEPTIONAL SAFETY, TOO

Safety is one of Olate's biggest advantages. Its fluid solutions provide thorough, even penetration of the cloth. Its free-rinsing properties help produce clean, sweet-smelling goods.

As a safeguard against bare spots, uneven shrinkage, non-uniform fulling and poor felting, Olate will stand comparison with any other cleansing agent you've ever used. Olate will help you turn out woolens and worsteds you'll be proud to ship from your plant.

Today, when smooth, economical production is so vitally important, it will pay you to test the top-notch performance Olate can deliver in your wet finishing operations.

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Prompt Shipment from 10 Strategically-Located Steel-Service Plants... Principal products include—Alloy Steels, Tool Steels, Stainless Steel, Hot Rolled Bars, Hoops and Bands, Beams and Heavy Structurals, Channels, Angles, Tees and Zees, Plates, Sheets, Cold Finished Shafting and Screw Stock, Strip Steel, Flat Wire, Boiler Tubes and Fittings, Mechanical Tubing, Rivets, Bolts, Nuts, Washers, etc. Write for Stock List. Joseph T. Ryerson & Son, Inc. Plants at: Chicago, Milwaukee, St. Louis, Detroit, Buffalo, Cincinnati, Cleveland, Boston, Philadelphia, Jersey City.

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TEXTILE MILL NEWS

Cotton Mill News

Arms Textile Mfg. Co., which occupies one of the former Amoskeag mills in Manchester, N. H., suffered damage estimated at $50,000 in a fire Dec. 13. An over-heated slasher was blamed.

Brighton Mills, Inc., have been organized to take over and consolidate the Brighton Mills, Clifton, N. J., and Southern-Brighton Mills, Shannon, Ga. First noted company has been a holding company for latter concern heretofore.

Buffalo Mills, Shelby, N. C., have lately acquired through R. J. Woods, head, a former knitting mill at Boiling Springs, N. C., consisting of a one-story building, totaling about 10,000 sq. ft. of floor space, and will modernize and equip for new branch mill for production of coarse carded yarns, similar to those manufactured at Shelby plant. Equipment and facilities will be provided for initial employment of about 50 persons. It is proposed to begin operations early in 1942. Property has been taken over under lease, with option to purchase later.

California Cotton Mills Co., with units at Selma, Ala., and Oakland, Cal., has announced plans for construction of a one-story addition to the California mill, to be used primarily for warehouse.

Chicopee Mfg. Corp., Chicopee Falls, Mass., has begun construction of one-story top addition to present three-story mill, 43 x 48 ft., including alterations and improvements in existing building, for which general contract recently was let to Adams & Ruxton Construction Co., Springfield, Mass. Cost estimated about $25,000, exclusive of equipment.

Dexter Yarn Mill, Broadway, Pawtucket, R. I., constructed in 1813 and one of the oldest plants in the country, is being demolished, and site will be used for a building of another character.

Elberton (Ga.) **Mills, Inc.,** are contemplating addition of another unit to their plant.

Entwistle Mfg. Co., Rockingham, N. C., showed a surplus account of $944,599 the end of their fiscal year, Sept. 30, 1941, as compared with $767,283 on Sept. 30, 1940.

Hathaway Mfg. Co., New Bedford, Mass., reports net profit of $259,287 for fiscal year ended Sept. 27.

High Falls (N.C.) **Cotton Mills,** recently purchased by Walter Curry and John Curry of Carthage, N. C., have installed additional machinery.

Holland (Mich.) **Cotton Products Co.** has been chartered with capital of $50,000, to take over and succeed to Komforter Kotten Kompany, with local mill, and will continue same line of production. Komforter company was purchased recently by William Arendshorst, Holland, who will be president of new company. Alfred Van Duren will continue as plant manager under the new ownership.

Jefferson Mills, No. 2 unit, Crawford, Ga., have changed over 19 spinning frames to Saco-Lowell long draft.

Judson Mills, Greenville, S. C., has placed on sale 93 houses in its community as final step in disposal of its mill village. Prices range from $825 to $1,050.

Leward Cotton Mills, Inc., Worthville, N. C., have awarded contract to F. D. Lewis & Son, 601 Railroad St., Greensboro, N. C., for rebuilding and improvements in dam at mill, including rock and earth excavations, and installation of reinforced-concrete. Richard H. Moore, Asheboro, N. C., is engineer.

Lily Mill & Power Co., Shelby, N. C., has constructed a club house as a memorial to the late Mrs. Lily M. Schenck, mother of two officials of the mills, Gene Schenck and John Schenck, Jr. The club house will provide recreational activities for the operatives and their families.

Meredith (N.H.) **Linen Mills, Inc.,** have been chartered with capital of $200,000, to take over and succeed to company of same name, with local mill. J. Thomason Phelps is president and treasurer of new organization.

Modern Mfg. Braid Corp., 12 East 22nd. St., New York, N. Y., has leased a floor in building at 708 Broadway, aggregating about 17,500 sq. ft. of floor space, and will occupy for expansion.

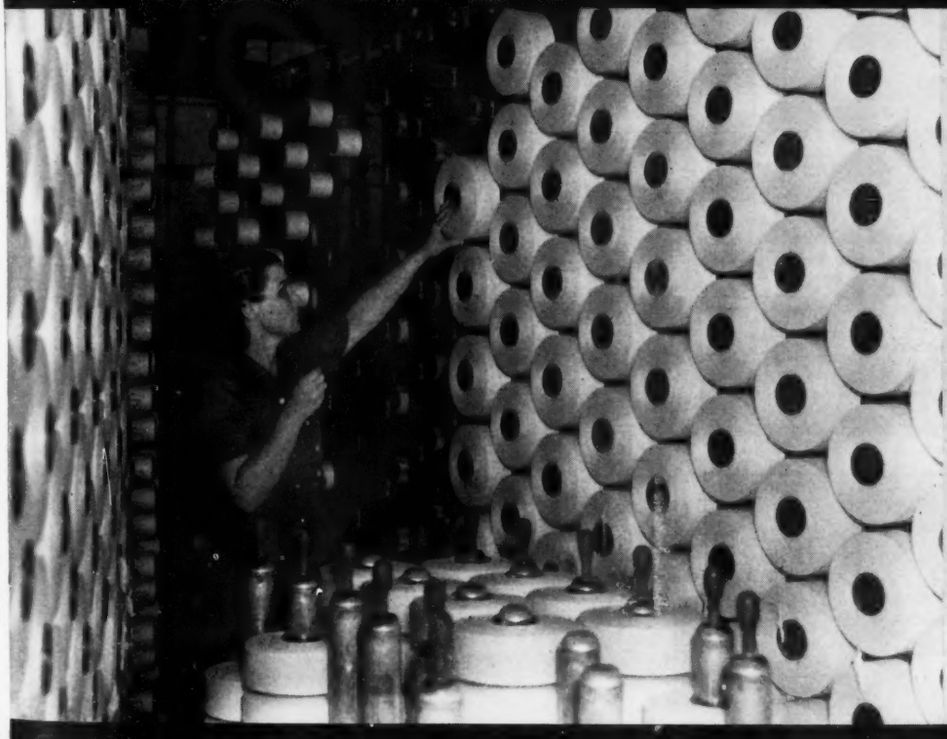
Nashua Mfg. Co., Boston, reports net profit for the fiscal year ended Nov. 1 of $1,353,922 against a net loss of $247,184 for the previous year.

New England Card & Trimming Co., 115 West Brookline St., Boston, Mass., has been chartered with capital of 100 shares of stock, to operate a local mill for production of cotton specialties. Morris G.

BARBER-COLMAN SYSTEM OF SPOOLING AND WARPING

TIME and EFFORT SAVED in CREELING

No Lifting Required in Handling Cheeses on Tridents
Creel Loaded on Inside While Running from Outside



Cheeses come to the transfer table on tridents holding 15 cheeses each. These tridents are simply slid onto the truck--no lifting is necessary. This truck is rolled to the inside of the creel, where loading, for either plain or striped beams, is quickly and easily accomplished at the same time that a beam is being run from the outside of the creel. The Barber-Colman system assures greater production with less effort.

BARBER-COLMAN COMPANY

ROCKFORD, ILLINOIS, U. S. A.

FRAMINGHAM, MASS., U. S. A. • GREENVILLE, S. C., U. S. A. • MANCHESTER, ENGLAND • MUNICH, GERMANY

CROSS COTTON MILLS CO.
DOUBLE CARDED
FINEST QUALITY
MARION, N.C.

HEDDLE FRAMES
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HEDDLES
•
SHUTTLES
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HAND CARDS • STRIPPER CARDS

THE SHUTTLE PEOPLE

WATSON-WILLIAMS
MANUFACTURING CO.
MILLBURY, MASSACHUSETTS
SOUTHERN OFFICE: E.V. Wilson, 810 Woodside Bldg., Greenville, S.C.
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ALLEN Hollow
Hex-hole Screws for
TEXTILE MACHINERY

Heads set flush with machine surfaces. No sharp edges or slots to burr and pull threads; screws are chamfered at the point, outside edge of head and top edge of socket. The internally operated hex key sets the screw quickly and *tightly* without slippage. Samples supplied to your specifications.

THE ALLEN MANUFACTURING COMPANY
Hartford, Connecticut, U. S. A.

Merelis, 69 Kenwood St., Brookline, Mass., is treasurer.

Pomona Mfg. Co. Greensboro, S. C.—Entire stock has been purchased by William Ockrant and J. Robert Orton, of Cincinnati, Ohio. Under the new arrangement, Mr. Ockrant will be president; Myles B. Bearden will be vice-president and general manager; Mr. Orton will be treasurer and Robert H. Frazier, Greensboro attorney, will be secretary. The mill employs between 600 and 700.

Spinning Wheel Rugs, Inc., New York, has leased a one-story building on U. S. Highway 25, in vicinity of Hendersonville, N. C., and will establish a new mill soon.

Standard - Coosa-Thatcher Co., reports net earnings for fiscal year ending Sept. 30, 1941, to be $858,418, compared with $498,374 in the previous fiscal year.

Taber Mill property, New Bedford, Mass., has been sold by the Grinnell Realty & Warehouse Corp., headed by Robert J. Cohen of Fall River, to an electrical manufacturing company, name of which is withheld at this time.

Wool Mill News

Angus Park Mill of the Thames Woolen Co., Glastonbury, Conn., was destroyed by fire Dec. 19, the damage being estimated at $150,000 by plant superintendent John Hulme. The fire started in the card room from ignition of wool dust by a spark attributed to a broken incandescent lamp. The mill was built before the Civil War and was owned by Furman Bros., Norwich, Conn.

Arlington Mills, Lawrence, Mass., have arranged for purchase of adjoining Acadia Mill property, heretofore held by William Whitman Co., and idle for several years, and will use for expansion. Equipment was removed from plant some time ago and recently it has been used for storage of wool by the Arlington company. Arlington Mills are negotiating with the city for the purchase of 1,000,000 gal. of water daily whenever an emergency arises. The mill consumes 9,000,000 gal. daily which is twice as much as is used by the city in a day. Water in the Arlington Mills reservoir, North Salem, N. H., has been at its lowest mark since 1923 when it was first flooded.

Alderman Top Co., Holyoke, Mass., is going to complete its purchase of the former No. 4 Farr Alpaca Co. mill on Jan. 1, when it turned over $25,000 to Dewitt Mallory, receiver for the Farr. Falco Field remains the only Farr property not disposed of.

Bell Co., Worcester, Mass., has purchased a four-story mill building of the former Amoskeag plant, Manchester, N. H., totaling about 100,000 sq. ft. of floor space, and will occupy for new branch plant, primarily for wool-combing. Equipment will be provided for working force of about 75 persons. Company has organized a subsidiary to be known as Bell Co. of New Hampshire, Inc., to operate the mill. Plant was lately the wool combing department of Raylaine Worsted, Inc.

Bondsville Realty Co., owner of the woolen manufacturing unit of the Boston Duck Co., Palmer, Mass., is arranging for the operation of that unit.

Arthur I. Darman, Inc., Woonsocket, R. I., has taken over a building of more than 80,000 sq. ft., to handle an expanding business. A new department has recently been added to supply the trade using blended stocks of reprocessed and re-used wool. It is in charge of Leon R. Rowe.

Eldorado (Tex.) **Woolen Mills** plans new one-story mill at Del Rio, Tex., reported to cost about $90,000, including equipment. Project is scheduled to be placed under way early in 1942.

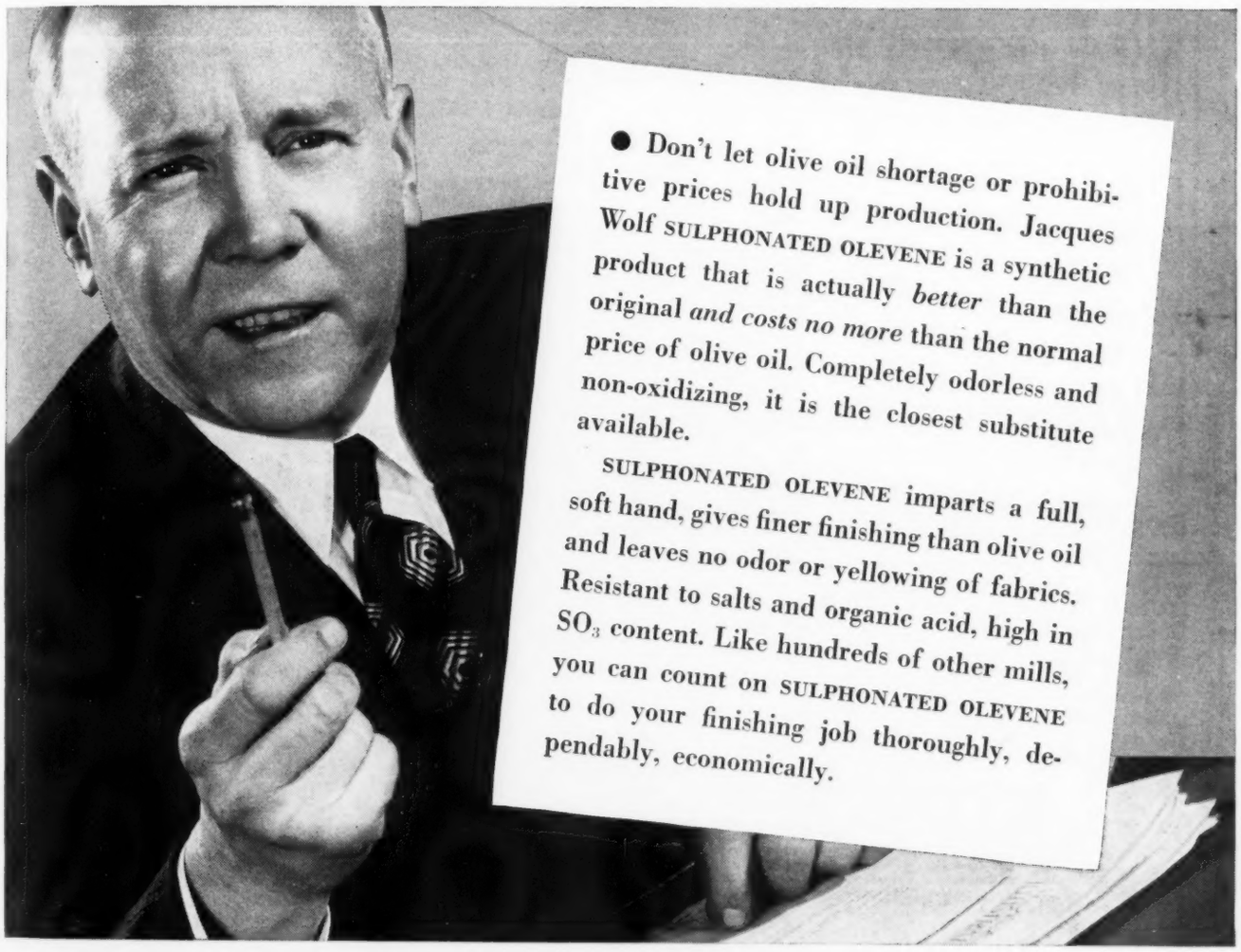
E. E. Hilliard Co., Hazardville, Conn., closed for a number of years, was sold Dec. 18. Aaron Krock, Worcester, Mass., paid $33,000 for principal mill building, and will resell. The sale includes water rights on the Hockanum River and Hop Brook, and 57 acres of land. Thirteen houses brought $26,100. Machinery assessed for $50,000 brought exceptionally high prices.

Hudson River Woolen Mills, Newburgh, N. Y., machinery and equipment were sold at auction by Aaron Krock & Co., Worcester, Mass., on Dec. 13. The real estate was sold on the same day by Joseph P. Day, Inc., New York.

New York Textile Plants Corp., recently organized, has taken over operation of Jamestown (N.Y.) Worsted Mills, as of Dec. 8. The New York concern, headed by Frederick Stafford, recently acquired all buildings, machinery and equipment of the Jamestown firm, which has been in continuous operation for more than 70 years. Other officers of the new company, all of New York City, are James Stafford, vice-president, and Maurice Clairmonde, secretary-treasurer.

New Dam Woolen Mill, Somersworth, N. H., recently

Clear that bottleneck... use SULPHONATED OLEVENE



● Don't let olive oil shortage or prohibitive prices hold up production. Jacques Wolf SULPHONATED OLEVENE is a synthetic product that is actually *better* than the original *and costs no more* than the normal price of olive oil. Completely odorless and non-oxidizing, it is the closest substitute available.

SULPHONATED OLEVENE imparts a full, soft hand, gives finer finishing than olive oil and leaves no odor or yellowing of fabrics. Resistant to salts and organic acid, high in SO_3 content. Like hundreds of other mills, you can count on SULPHONATED OLEVENE to do your finishing job thoroughly, dependably, economically.

IMPORTED GUMS. Arabic, Tragacanth and Karaya in crude and powder form for printing, sizing and finishing. Also solutions of these gums processed to remove all bark and dirt.

SPECIAL PRINTING PREPARATIONS. Superclear and Supertex—made clear and fluid by special patented processes.
OTHER PRINTING PRODUCTS. Steam Black, Acetate of Chrome. Textile Gum C. A. 36.

WOLF BRAND PRODUCTS

JACQUES WOLF & CO.
Chemicals PASSAIC, N. J.

WAREHOUSES: Providence, R. I., Philadelphia, Pa., Utica, N. Y., Chicago, Ill., Greenville, S. C., Chattanooga, Tenn., Knoxville, Tenn., Charlotte, N. C., Milwaukee, Wisc., Columbus, Ga.
Midwestern Distributor: Bradley F. Marthens, Chicago, Ill.

WHITMAN YARNS

WORSTED • COTTON • SPUN RAYON

ARLINGTON MILLS
LAWRENCE, MASS.

•

MONOMAC SPINNING CO.
LAWRENCE, MASS.

•

NONQUITT MILLS
NEW BEDFORD, MASS.

WILLIAM WHITMAN COMPANY, INC.
NEW YORK BOSTON PHILADELPHIA CHARLOTTE

In this "War of Materials"—

In this war of materials and production, testing helps you defeat the many new problems. Substitute materials, rigid specifications, rush schedules—your *Scott Testers give you the vital Basic Control of purchases, research and production.

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"YOU CAN COUNT ON WAK COUNTERS"

They are

RUGGED
ACCURATE
DEPENDABLE

We build single, double and triple pick counters; yardage, rotary, ratchet and special counters.

Write—Phone—Wire

WAK INDUSTRIES
CHARLOTTE, N. C.

purchased by E. A. Baxter Co., Watertown, Mass., has started manufacture of tweeds. Two-shift operation, with approximately 300 employes, was anticipated soon after the idle plant was reopened.

Payson Products, Inc., Rockland, Mass., recently organized with capital of $100,000 and 3000 shares of stock, no par value, plans operation of local mill on cotton and woolen specialties. Lewis H. Parks is president; and E. D. Peabody, 220 Devonshire St., Boston, Mass., treasurer.

Rayon & Silk Mill News

American Enka Corp., Enka, N. C., has approved plans for one-story addition for expansion in twisting division, and will begin superstructure soon. Cost reported over $75,000, with machinery.

American Viscose Corp., Roanoke, Va., has approved plans for one-story addition to processing department, estimated to cost over $50,000, with machinery.

Canadian Industries, Ltd., Montreal, Que., plan expansion in Nylon yarn mill at Kingston, Ont., now in course of construction, with additional mill unit and machinery estimated to cost close to $1,000,000. Plant is scheduled to be ready for service early in 1942.

E. I. duPont deNemours & Co., Nylon Division, Wilmington, Del., plans expansion in Nylon yarn mill at Seaford, Del., as reported last month, including machinery to increase present capacity from 8,000,000 to 12,000,000 lbs. per annum. Work is scheduled to begin early in 1942. Company also will make extensions in branch chemical plant at Belle, W. Va., used for production of Nylon intermediates, with equipment and facilities for large advance in present output.

Elberton (Ga.) Mills, formerly known as Seaboard Silk Mills, have plans under way for one-story addition to cost about $40,000, with work to be carried out early in 1942.

George H. Gilbert Mills, Ware, Mass., may be reopened to manufacture fabric from waste silk reclaimed from old silk stockings. George Olson, former general manager is behind the project, and believes the product useful as dress goods if not for powder bags, the latter use having been previously rejected by OPM.

National Silk Spinning Co., New Bedford, Mass., has sold its five-story building to Robert J. Cohen of Fall River. Mr. Cohen will use the property as a storehouse for British wool which now is stored in Taber Mill.

Nunda (N. Y.) Silk Mill, owned and operated by Canisteo (N. Y.) Corp., has reopened for business, having received a Government order for parachute cloth.

Pondel Fabrics, Inc., Pawtucket, R. I., recently organized, plans operation of mill for manufacture of cotton and rayon goods. New company is headed by Francis B. Keeney, 97 Lorraine Ave., Pawtucket; and Ernest A. Jenckes, Providence, R. I.

Pinehurst Cloth Mills, Inc., Hemp, N. C., is the new name of the former Pinehurst Silk Mills, Inc. The new name was adopted because of the recent elimination of silk as a source of fiber supply.

Suncook Mills, Boston, reports net profit for fiscal year ended Sept. 27 of $248,375 against $216,667 in the previous fiscal year.

Thread City Silk Co., Willimantic, Conn., has closed down for an indefinite period owing to lack of raw silk.

Knitting Mill News

Aycock Hosiery Mills, South Pittsburg, Tenn., is operating 21 looping machines and plans soon to double this number.

City Hosiery Mill, Murphy, N. C., was destroyed by fire on Dec. 4. It was owned and operated by L. M. Shields.

El Encanto Hosiery Mills has been incorporated in Los Angeles, Calif., with 2500 shares of no par value stock. Directors are: R. B. and Oral Regan and V. W. Bennett. Corporation is represented by V. W. Bennett, 2601 South Figueroa St., Los Angeles.

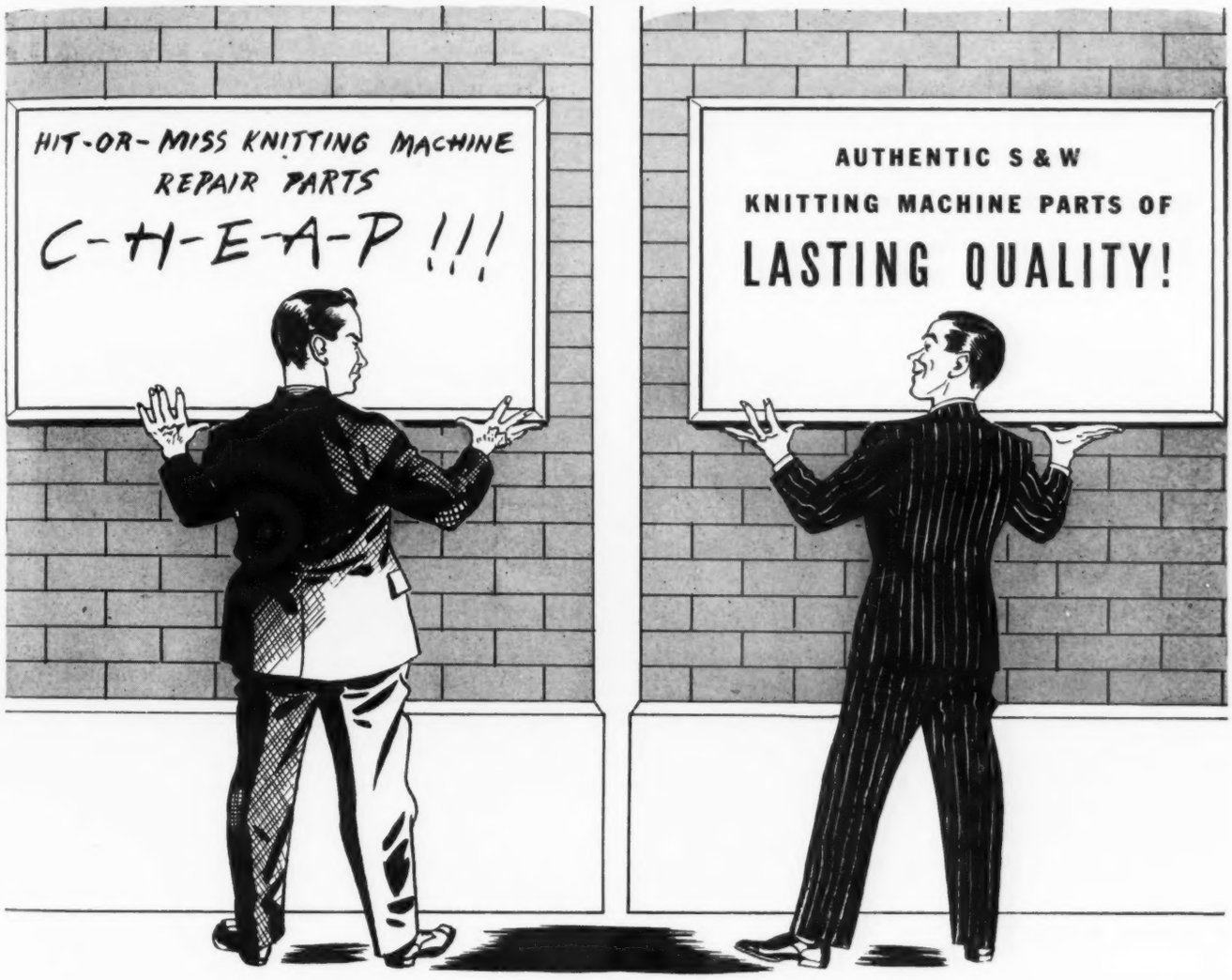
Elliott Knitting Mills Inc., Hickory, N. C., have installed a new Zephyr extractor and auxiliary equipment.

Goodwear Corp., High Point, N. C., recently organized with capital of $100,000, is planning early operation of local knitting mill for hosiery and underwear. Headed by H. S. Haworth and Owen Reese.

Gordonshire Hosiery Mills, Inc., 220 Devonshire St., Boston, Mass., has been organized with capital of 1000 shares of stock, to operate a local knitting mill. Leonard Kaplin is president.

Headland, Ala. The local hosiery mill is adding two 45-

WHO GETS YOUR BUSINESS?



ONLY ONE is worthy of your patronage . . .

ONLY ONE delivers satisfaction!

Business is all too full of opportunities for false economies . . . the kind that cost a lot more in the long run. Cheap, local-made knitting machine replacement parts are typical of a kind of false economy that every knitting mill is likely to run up against sooner or later. And that is the time it pays to remember . . .

Your S & W knitting machines are thoroughbred performers. In the quality, consistency, speed, and true economy of their performance they are unsurpassed in the field of knitting machine equipment. But they must be kept that way, maintained to deliver their capable best. This means, of course, that when any parts after long, hard service must be replaced, only genuine S & W parts should be specified. Smart, experienced mill men, responsible for maintaining equipment at the highest possible level of efficiency, all know this. That is why they speed an order to S & W without hesitation for any replacement parts that may be needed.

At the S & W factory there are 55,400 different standard parts . . . duplicates of the original parts in S & W machines . . . all carefully inspected and tested for complete reliability. Most of these can be sent promptly on receipt of your order. However, due to the national emergency, there may be in certain instances some delay in getting parts to you promptly. We, therefore, suggest that you keep on hand a stock of more likely part replacements. Teletype service is FREE from our High Point or New York offices.

REMEMBER . . . IT TAKES GENUINE S & W PARTS . . . FOR GENUINE S & W PRODUCTION QUALITY . . . AT ALL TIMES

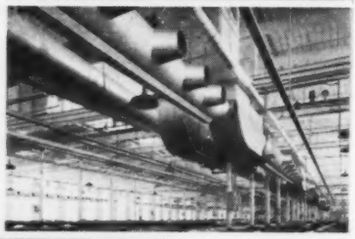
ESTABLISHED 1865 SCOTT & WILLIAMS INCORPORATED

40 WORTH STREET, NEW YORK, N. Y. • "THIS IS THE SCOTT & WILLIAMS MACHINE AGE"

AIR CONDITIONING

HUMIDIFYING
ATOMIZERS
UNIT SYSTEM
CENTRAL STATION
AIR FILTERS
HEATING
COOLING

ENGINEERS—EQUIPMENT FOR THE TEXTILE INDUSTRY



Bahnson System
AIR CONDITIONING ENGINEERS
THE BAHNSON CO. WINSTON-SALEM, N. C.

For 25 years we have been successfully solving the air-conditioning problems of the Textile Industry.

You can hold your carding troubles in the palm of your hand When you use
Booth Quality Card Clothing
Benjamin Booth Co.
Allegheny Ave. & Janney St., Phila.

NOVELTY-YARNS
For
WEAVERS-KNITTERS
MONTGOMERY
WINDSOR LOCKS, CONN.
Designers and Spinners of Novelty Yarns

H. G. LORD *comments on*

Submarines Again!

See page 6

ganized with capital of $100,000 and 3000 shares of stock, no par value, plans operation of local mill on cotton and woolen specialties. Lewis H. Parks is president; and E. D. Peabody, 220 Devonshire St., Boston, Mass., treasurer.

C. C. Hill Hosiery Mill, Thomasville, N. C., is a newly established mill for manufacture of half-hose and anklets.

Holeproof Hosiery Co., Milwaukee, Wis., has awarded contract to Dahlman Construction Co., Milwaukee, for alterations and improvements in mill. No estimate of cost announced.

Holman Knitwear Co. has been incorporated in Los Angeles, Calif., with a capital of $25,000. Directors are: Charles and D. D. Holman and I. M. Pemper. Corporation is represented by S. H. Robinson, 756 South Broadway, Los Angeles.

London (Ont.) Hosiery Mills, Ltd., plan new one-story addition, reported to cost close to $50,000, including machinery.

Lycoming Hosiery Mills, Lester, Pa., has started up its new 51-gage hosiery plant.

B. A. Lynch, Blytheville, Ark., heads project to construct and operate a local mill on Nylon hosiery. Negotiations are under way with municipal officials to arrange for construction of a one-story building, to be occupied under lease. Machinery installation is estimated to cost over $300,000. Proposed to carry out project early in 1942.

Pacolet Knitting Co., Lynn, N. C., has been purchased by Carl O. Story. The mill has not operated for some time. Plans have not been announced for future operation.

Prudential Knitting Mills, 6 North Fifth St., Philadelphia, Pa., have filed notice of organization to operate a local mill. Harry Rubin, 4815 Pine St., Philadelphia, is head.

San-Knit-Ary Textile Mills, Philadelphia, Pa., have taken over a two-story mill at 5423-25 Lena St., of 16,000 sq. ft. of floor space, recently purchased, including tract of adjoining land, totaling 14,000 sq. ft., and will occupy for plant, with installation of additional equipment and facilities for increase in former capacity.

Spalding Knitting Mills, South Pittsburg, Tenn., unit, announces an expansion program. The company has been operating 21 looping machines and these are to be doubled in the immediate future.

H. S. Stokes, 513 Glade St., Winston-Salem, N. C., has purchased buildings and real estate from Hanes Hosiery Mills, North Marshall and Second Sts., including adjoining plot of land, about 55 x 90 ft. New owner is reported planning to use property for textile mill service as heretofore.

Swiss Knitting Co., Dover, N. J., has begun erection of one-story addition, about 75 x 100 ft., for increased capacity. Construction contract was let recently to Lloyd Pruden, 58 New St., Dover. Cost reported close to $60,000, including machinery.

Tricnit Hosiery Mill, Greenville, N. H., has purchased all the knitting machines and other equipment formerly owned by the Allen-A Co., New Ipswich, and the plant has been enlarged to accommodate the additional machinery. The mill is owned by Philip C. Thayer and William H. Moore.

Villa Rica (Ga.) Mills, Inc., manufacturers of yarns and men's hose, plans manufacture of pants and shirts, beginning early in January, 1942.

Processing Plant News

Arcadia, Calif. The yarn dyeing plant at 118 St. Joseph Street was sold, together with machinery and equipment, on Nov. 27, by Mary Wright to Max and Jack Rouse.

Bradford Dyeing Association, Westerly, R. I., has begun erection of a one-story warehouse, for which general contract was awarded to R. A. Sherman Sons Co., Westerly. Cost reported about $40,000.

Narrow Fabric Coaters, Inc., 70 Green St., Fairhaven, Mass., recently organized with capital of 1000 shares of stock, no par value, plan early operation of a dyeing and finishing mill. Harold A. Evans, address noted, is treasurer.

National Textile Printing Corp., has been organized in Los Angeles, Calif., with capital of $25,000. Directors are: Andre Doriet, R. B. Coleman and Edward J. Kraft. Corporation is represented by Kraft & Gray, Pellissier Building, Los Angeles.

North Georgia Processing Co., Toccoa, Ga., unit of J. & P. Coats threads, has installed a 100-kilowatt generator, operated by steam, to be used during current shortages.

Philadelphia (Pa.) Textile Finishers, Inc., 4041 Ridge Ave., has leased space in mill building at Main and Cotton Sts., Manayunk, totaling about 3900 sq. ft. of floor space and will occupy for expansion.

Pontiac (R.I.) Finishing Co. plant of Fruit-of-the-Loom, Inc., has installed various improvements including concrete floors.

IT'S JUST A SYMBOL

Our sky-climbing buildings symbolize American enterprise and achievement . . . typical expressions of that American way of life which is more enduring than bedrock, concrete and steel. Stein-Hall enterprise over the past 76 years . . . through war and peace, prosperity and depression . . . has achieved a business so firmly grounded in fair dealing that our customers know we regard their best interests as our own. They know they can depend on us to serve them with textile sizings and finishings of the highest quality and efficiency. Their good will is the bedrock of our business.

SEVENTY-SIX YEARS OF STARCH SERVICE

SH STEIN, HALL & COMPANY, Inc. SH

285 Madison Avenue • New York 1011 Johnston Bldg. • Charlotte, N. C.

LABORATORIES AT . . NEW YORK • CHICAGO • CHARLOTTE • PROVIDENCE • LONG ISLAND CITY N. Y.

A TEXTILE STARCH FOR EVERY TEXTILE PURPOSE

PERKINS

Serving the TEXTILE INDUSTRY
surpassingly well since 1873

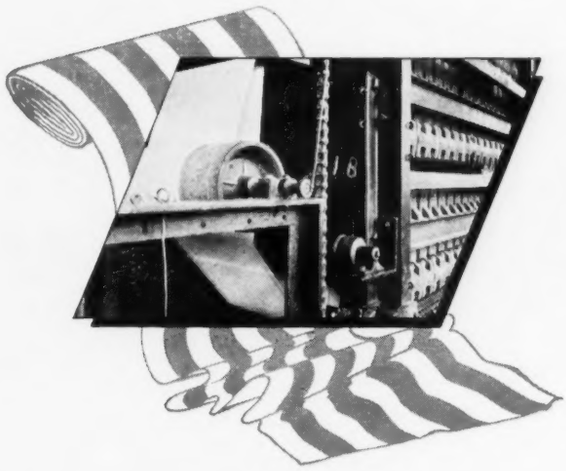
B. F. PERKINS & SON, INC.

ENGINEERS AND MANUFACTURERS

HOLYOKE • • • MASSACHUSETTS

If you seem to be getting too many "Seconds"

Your machine drives may be the cause. Check them for these fundamentals:



A *Are they positive*—or does slippage cause sloppy timing?

B *Are they dirty?* Do they gather lint or dust?

C *Do they put a maximum amount of power into production?*

Why use BALDWIN Roller Chain Belts?

● It's a proved fact that many textile mill operators have traced the source of too many "seconds" directly to their driving methods. Equally true is the fact that these same mill operators have eliminated this source of waste by adapting Baldwin roller chain belts to their drives on everything from garnetts to woolen cards, looms to printing machines. The reasons are many, but two important ones are:

Baldwin roller chain belts time intermachine functions to a split second and give a more even quality to the final cloth. Also, a Baldwin drive is a *clean drive!*

Next time "too many seconds" is your problem, call the Baldwin man. Baldwin-Duckworth, Division of Chain Belt Company, 346 Plainfield Street, Springfield, Mass. Factories at Springfield and Worcester, Mass.

PLEASE NOTE

Whether in relation to a defense problem or a commercial application, your inquiry will receive prompt attention. However, delivery of Baldwin products for the latter must be subordinate to the delivery of orders bearing priority distinction.

★

Positive!

THAT'S BALDWIN ROLLER CHAIN BELTS

Saves Fluorescent Installation and Maintenance Time

Westinghouse has reduced the job of industrial reflector attachment and removal to a simple "twist of the wrist." A mere quarter turn of two tension locked thumb latches instantly attaches or detaches the take-down reflector. No tools are required. There's neither wasted time nor effort in installation, maintenance or servicing.

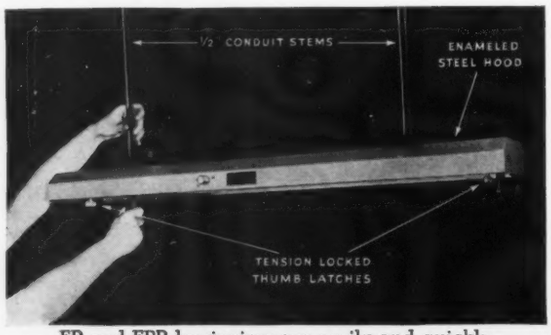
For general or supplementary lighting, Westinghouse provides two types of RLM, porcelain enameled units: Type FP, with closed ends; and Type FPR, with open ends. Both reflector types fit the same auxiliary-equipped hood. Units are furnished completely wired for 40-watt and 100-watt lamps and for new RF-85-watt lamps in open-end reflectors.

These quick-installation luminaires produce high-intensity illumination without annoying glare, harsh shadows or objectionable heat. They typify the contribution made by Westinghouse *engineered seeing* to practical and effective industrial lighting.

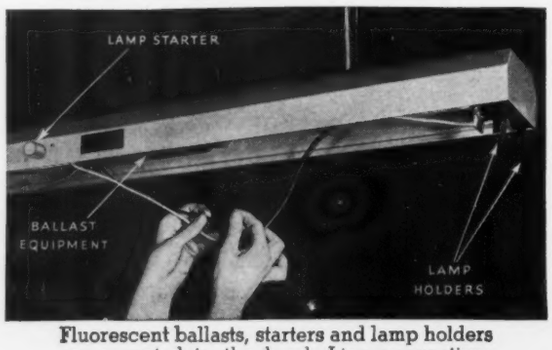
Engineered seeing—based on properly designed equipment and sound application—is available through your nearest Westinghouse Lighting Distributor. Ask him today for Fluorescent Catalog F61-000. Or, write Westinghouse Electric & Mfg. Co., Edgewater Park, Cleveland, Ohio.

★ ★ ★

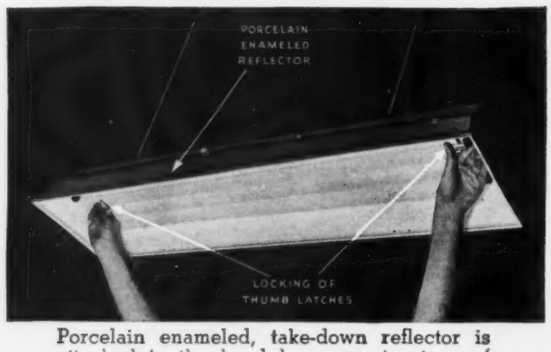
Engineered seeing is available through 117 Westinghouse Electric Supply Company offices and Independent Lighting Distributors.



FP and FPR luminaires are easily and quickly installed. Units are arranged for rigid or flexible conduit, or for chain mounting.



Fluorescent ballasts, starters and lamp holders are mounted in the hood. Line connections are quickly spliced to fixture leads.



Porcelain enameled, take-down reflector is attached to the hood by a quarter turn of two tension locked thumb latches.

Westinghouse LIGHTING EQUIPMENT

When You Require

- **CONTINUITY OF SERVICE**
- **LOW POWER COST**

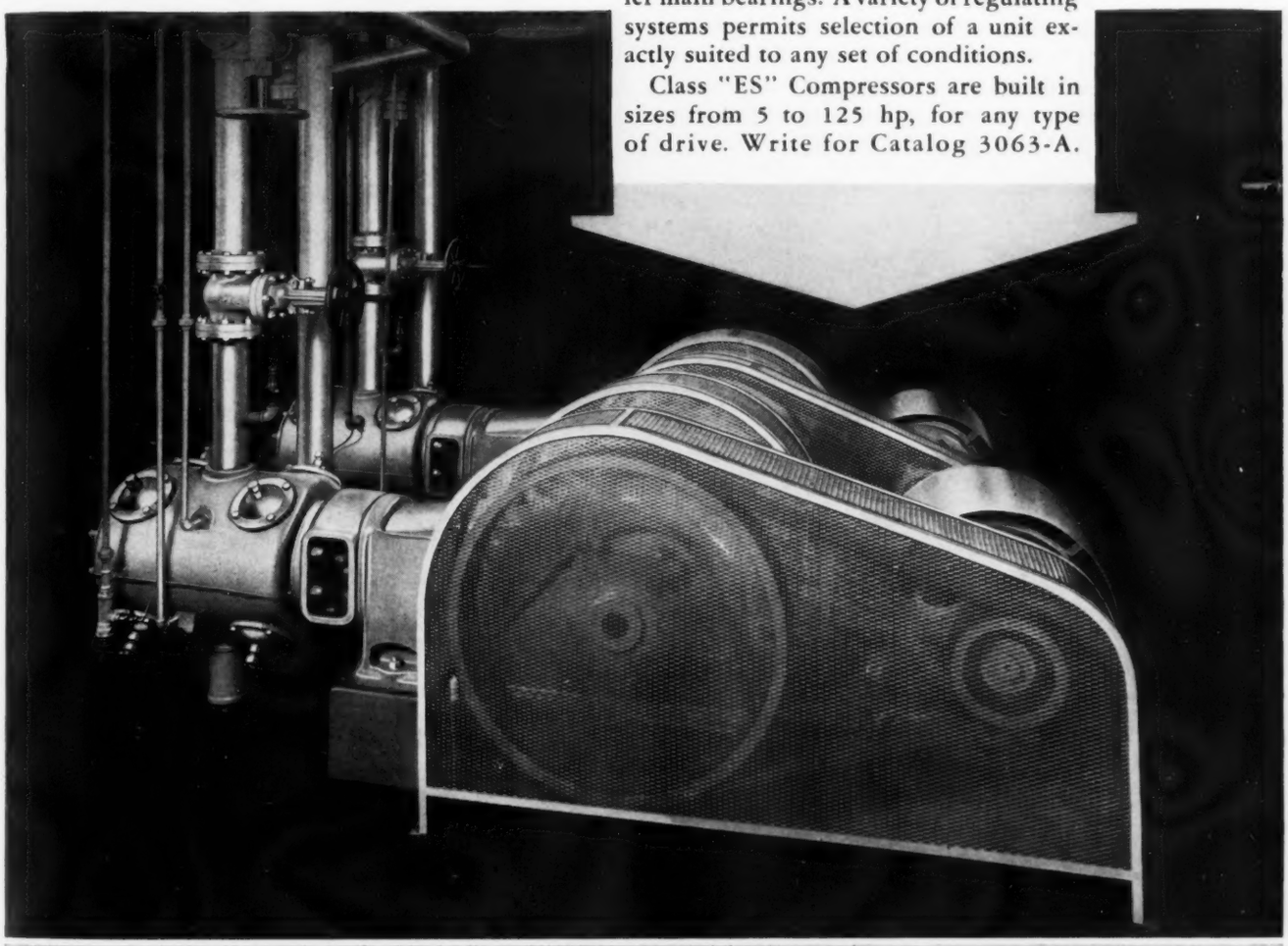
Class "ES" Compressors and the earlier models of horizontal design have been standard equipment for more than fifty years with thousands of mines, quarries, manufacturing plants and numerous other industries.

It will pay you to choose one of these units whenever you are in need of a reliable and efficient air or gas compressor for heavy duty, continuous service.

This compressor is equipped with I-R Channel Valves and Timken tapered-roller main bearings. A variety of regulating systems permits selection of a unit exactly suited to any set of conditions.

Class "ES" Compressors are built in sizes from 5 to 125 hp, for any type of drive. Write for Catalog 3063-A.

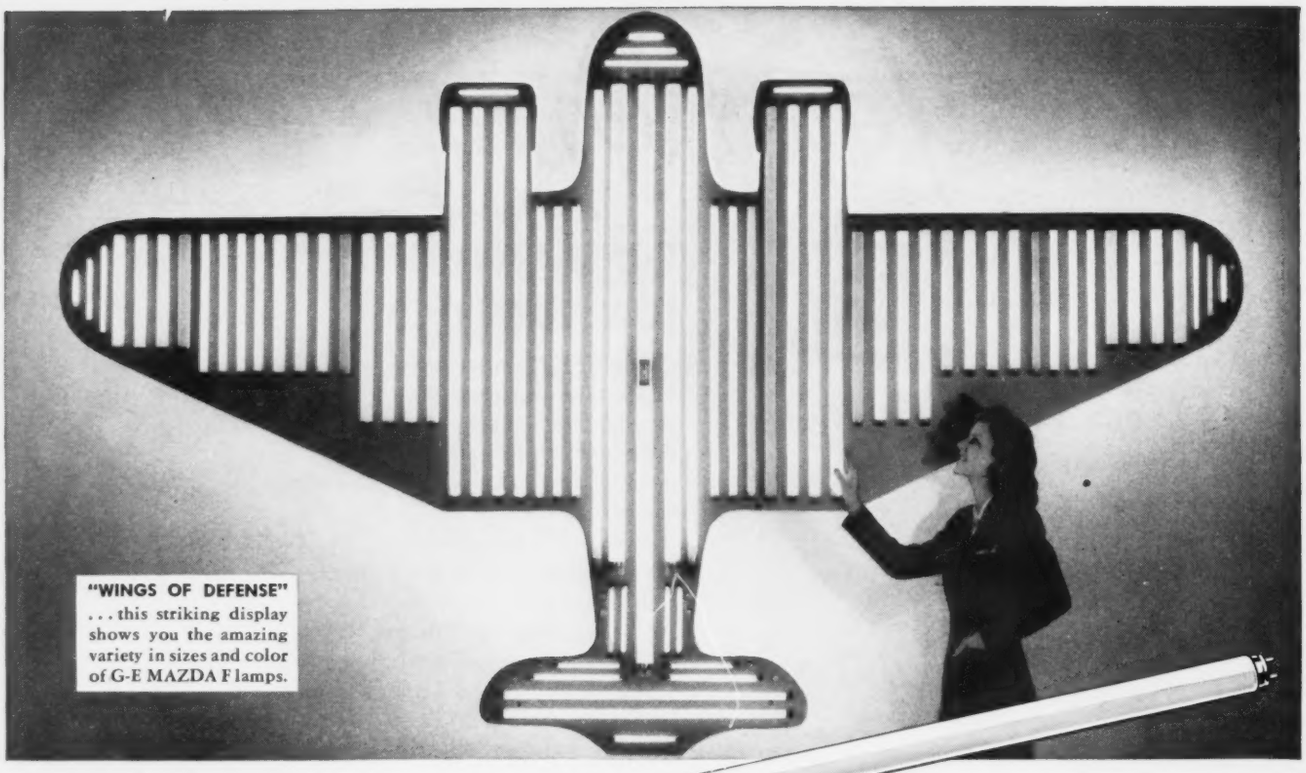
Select
CLASS "ES" COMPRESSORS



Atlanta, Birmingham, Boston, Buffalo, Butte, Chicago, Cincinnati, Cleveland, Dallas, Denver, Detroit, Duluth, El Paso, Hartford, Houston, Kansas City, Knoxville, Los Angeles, Newark, New York, Philadelphia, Picher, Pittsburgh, Pottsville, Salt Lake City, San Francisco, Scranton, Seattle, St. Louis, St. Paul, Tulsa, Washington

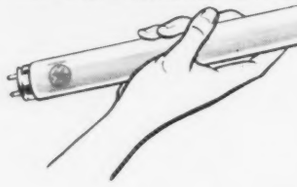
Ingersoll-Rand

862-1 11 BROADWAY, NEW YORK CITY



"WINGS OF DEFENSE" . . . this striking display shows you the amazing variety in sizes and color of G-E MAZDA F lamps.

Because more and more folks want these lamps



●The ever increasing demand for G-E MAZDA F (Fluorescent) lamps has resulted in many manufacturing economies in our fluorescent factories. In line with long established General Electric policy, these savings are passed along to our customers through the reduced prices on G-E MAZDA F lamps announced below, effective January 1, 1942.

This reduction marks another step in the downward trend of the cost of Better Light for Better Sight. (Since G-E MAZDA F lamps were first introduced in 1938 prices have been reduced as much as 60%). It is particularly significant now, since so many of these lamps are being used to supply cool, efficient "indoor daylight" for defense industries . . . to speed production, cut down waste and protect the eyesight of defense workers.

Effective January 1, 1942

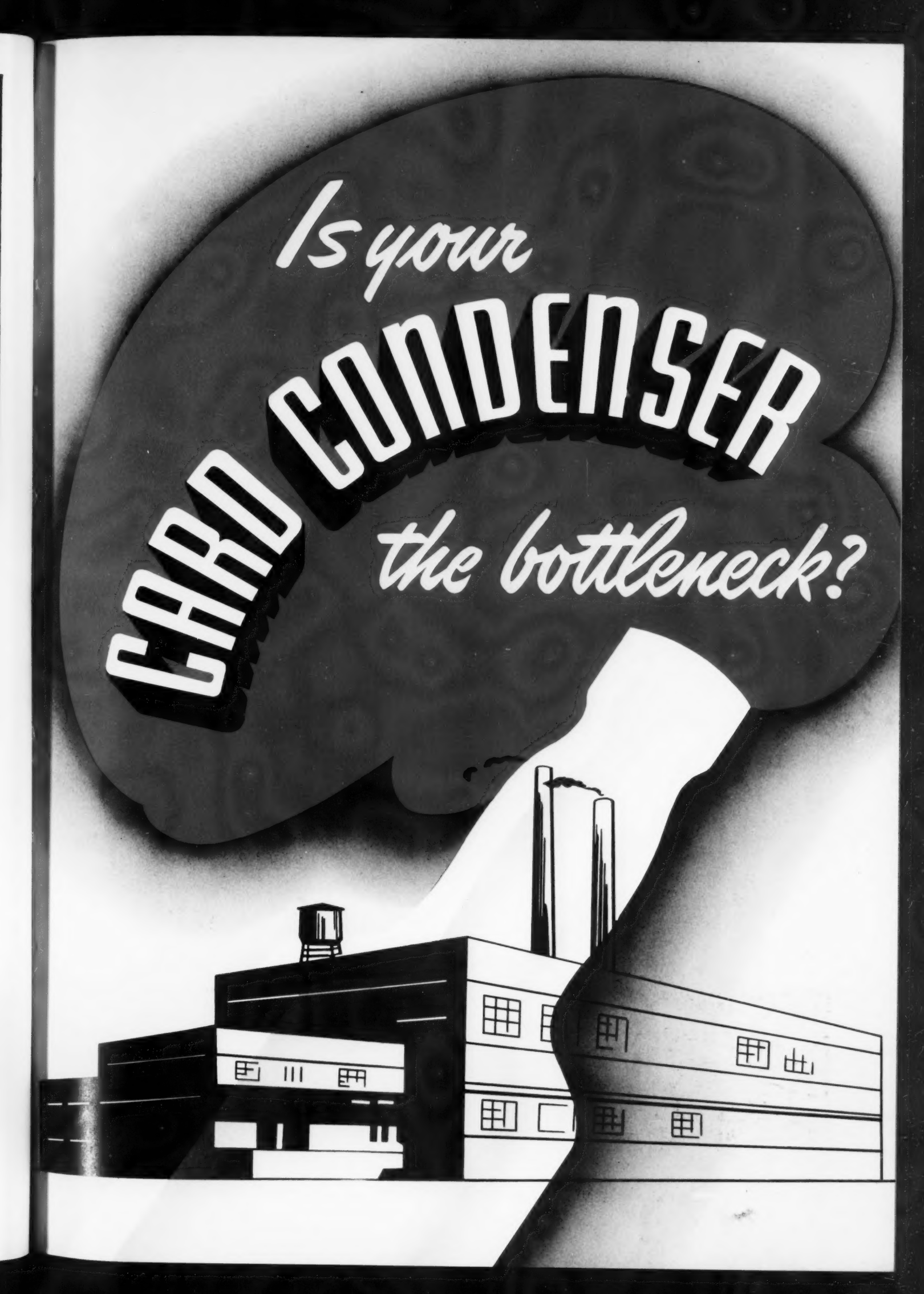
NEW LOW PRICES ON G-E MAZDA F LAMPS

14-watt T-12	was 90c	NOW	80c
15-watt T-8	was 75c	NOW	65c
15-watt T-12	was 95c	NOW	80c
20-watt T-12	was 95c	NOW	80c
30-watt T-8	was 95c	NOW	80c
40-watt T-12	was $1.35	NOW	$1.15
100-watt T-17	was $3.00	NOW	$2.60

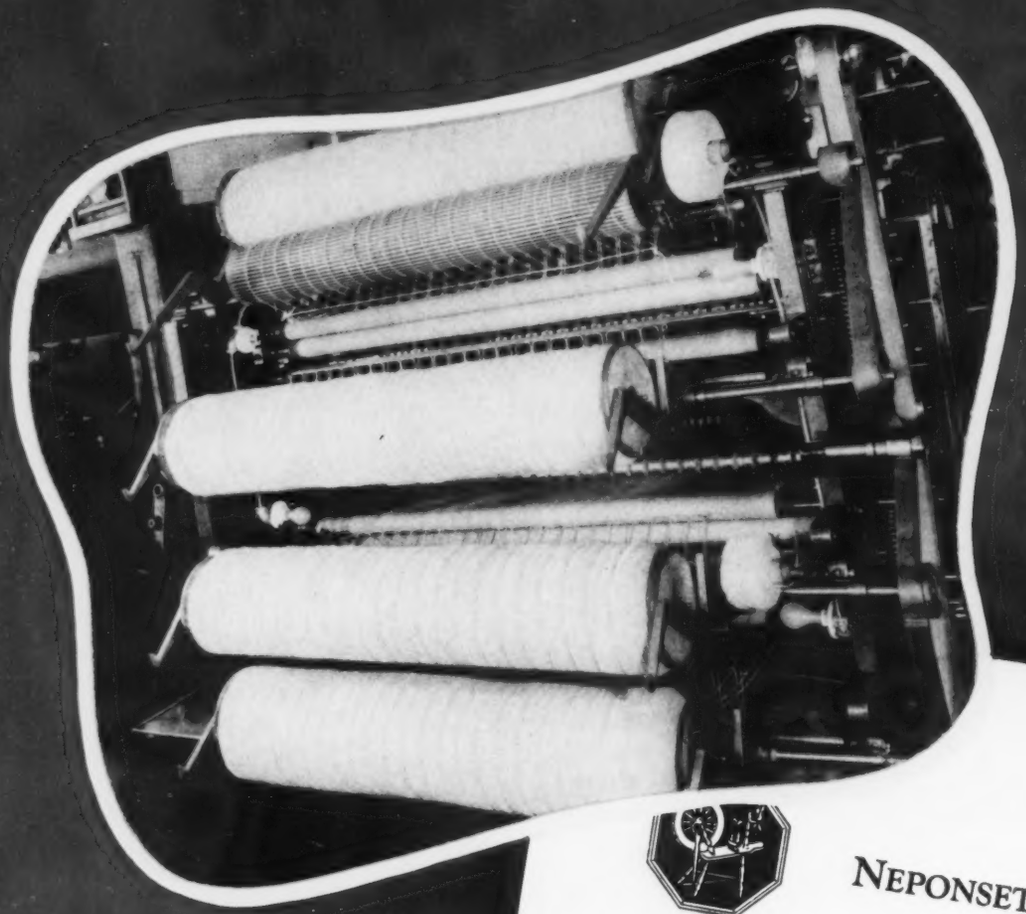
Above prices refer to daylight and 3500° white.
Prices also reduced on soft white and colored G-E MAZDA F lamps.

G-E MAZDA LAMPS

GENERAL ELECTRIC


Is your
CARD CONDENSER
the bottleneck?

RUB APRONS . .



Whitin Tape Condenser
Model D-4-B
Single Apron Rub

Bull Dog Rub Apron operating in a well-known woolen mill which, after giving them a thorough try-out, has already reordered five times.

Can you in these busy times make use of an increase in card condenser production of 25% or over and an increase in jack-spool capacity of from 40 to 50% by weight? If so, adopt the latest scientific improvement in woolen carding—Bull Dog synthetic rub aprons.

NEPONSET WOOLEN MILLS
INCORPORATED

CANTON, MASS.

Oct. 23, 1941

Boston Woven Hose & Rubber Co.
Box 1071
Boston, Mass.

Att: Mr. A.A. Beaulieu

Dear Mr. Beaulieu:

We appreciate very much your acceptance of our order for Bulldog rub aprons for our new carding equipment as we realize how difficult it is to obtain raw materials.

We have told many of our friends about the wonderful results we have obtained by the use of these aprons. We have been able to rub our wool stock very much better and we have slowed down our condensers. We have also increased the production off of the cards and we have increased the jack spool capacity from 25 to 40%.

We have been agreeably surprised how easy it is to keep these Bulldog Rub Aprons clean and they stay clean longer than any other type we have ever used and we are not required to use any dressing to keep them in good rubbing condition.

Again thanking you, we remain

Yours very truly,

WJF:AVMcD

NEPONSET WOOLEN MILLS

William J. Finn

BOSTON WOVEN HOSE & RUBBER COMPANY

busy
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. . . for Woolen Type Cards

These aprons have proved themselves in actual production in numerous mills, and these mills have been consistently reordering. Their managements are unanimous in their conviction that Boston Woven Hose & Rubber Co. has made an outstanding contribution to the efficiency of card condensing.

BIGELOW-SANFORD CARPET CO. Inc.

THOMPSONVILLE CONNECTICUT

October 25th, 1941

Mr. A. A. Beaulieu, Department Manager
Boston Woven Hose & Rubber Company
Box 1071
Boston, Massachusetts

Dear Sir:

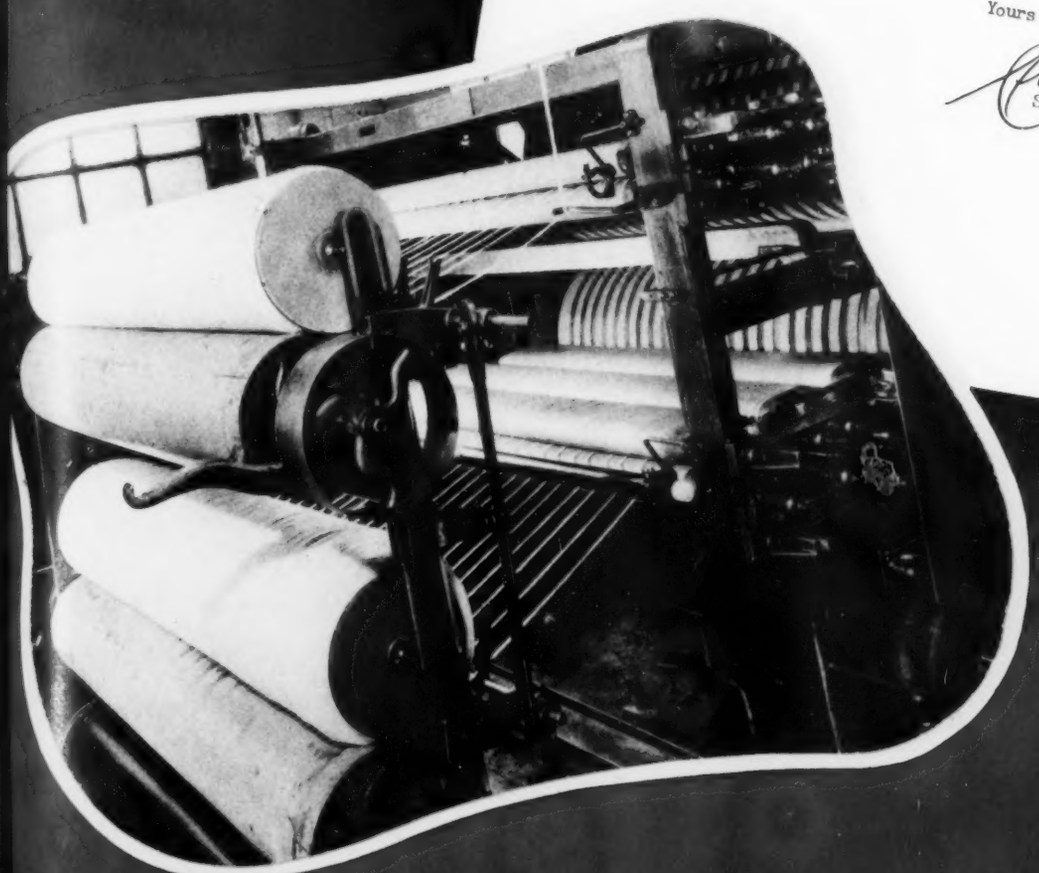
Our experience with your Bull Dog Rub-Aprons covers a period of approximately four years. During this time we thoroughly tested them on various types of condensers. We find they increase our card condenser capacity by 25 to 35% and jack spool capacity by 20 to 25% in weight. The latter results in reduced handling charges and longer runs on spinning frames.

The firmer roving produced on your aprons particularly lends itself to spinning on frames.

Based on the foregoing experience and the additional inducement of no sacrifice in apron life and the reduction in machine maintenance cost due to speed and setting adjustments, we propose to equip fully with your aprons at our Thompsonville and Amsterdam plants.

Yours very truly,

Superintendent.



DAVIS and FURBER
Double bank - triple Apron Rub.

N Y WORKS: CAMBRIDGE, MASS., U.S.A. - P.O. BOX 1071, BOSTON, MASS., U.S.A.

What BULL DOG RUB APRONS can do for you

The following claims are based on actual production records of numerous mills that have equipped various types of condensers with our aprons:

1. Increase card condenser production up to 25% or more.
2. Increase jack-spool capacity 40 to 50% by weight, thus reducing handling charges and making longer runs on spinning equipment.
3. Produce a firmer and denser roving that runs better on spinning equipment.
4. Reduce end breakage.
5. Stay clean longer — will not pick up stain as readily — easy to clean.
6. Resist oil.
7. Resist surface glazing and hardening (oxidation).
8. Retain high surface coefficient of friction without surface treatment.
9. Thoroughly proved in actual production service.
10. Patented reinforced construction.
11. Buttons securely anchored.
12. Reduce card and condenser maintenance costs.

Conclusion:

This is the rub apron of the present and future. We urge you to investigate.

BOSTON WOVEN HOSE AND RUBBER COMPANY

BWH

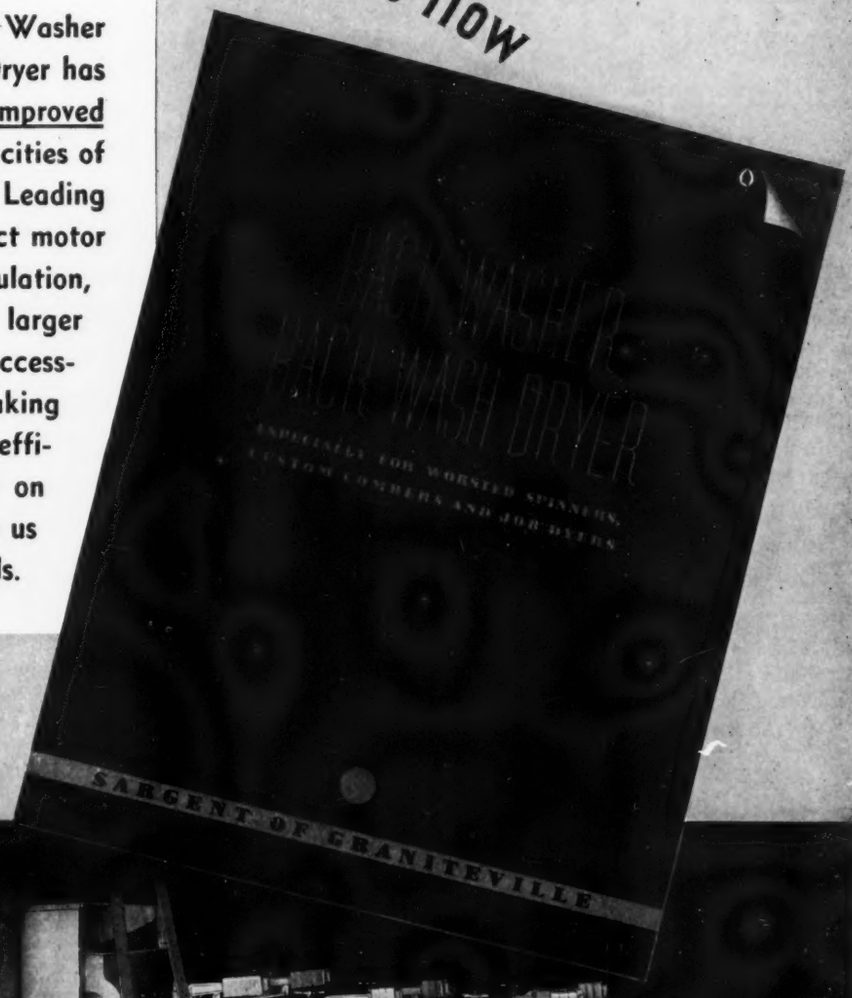
WORKS: CAMBRIDGE, MASS., U.S.A.

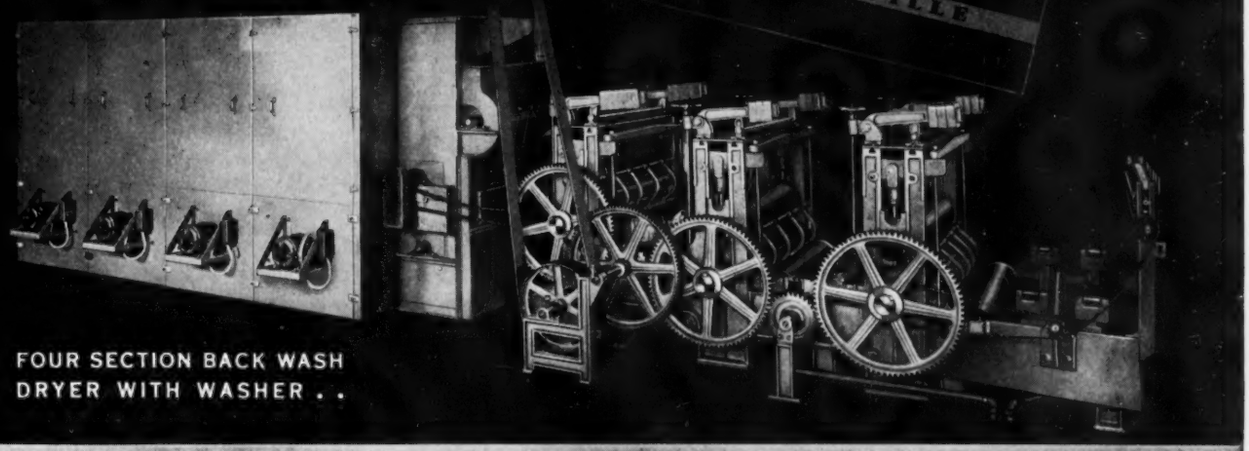
P.O. BOX 1071, BOSTON, MASS., U.S.A.

Increased production!

SEND FOR THIS BULLETIN... IT TELLS HOW

THIS Sargent Back Washer and Back Wash Dryer has been redesigned and improved to handle larger capacities of wool or rayon top. Leading features are . . . direct motor driven fans, better insulation, roller chain aprons, larger bowls, and more accessibility . . . thus making this unit the most efficient and attractive on the market. Write to us now for further details.





FOUR SECTION BACK WASH DRYER WITH WASHER . .

C. G. SARGENT'S SONS CORPORATION, GRANITEVILLE, MASS.

Defense Savings Pay-Roll Allotment Plan

How company heads can help their country, their employees, and themselves

voluntary pay-roll allotment plan | helps workers provide for the future | helps build future buying power | helps defend America today

This is no charity plea. It is a sound business proposition that vitally concerns the present and future welfare of your company, your employees, and yourself.

During the post-war period of readjustment, you may be faced with the unpleasant necessity of turning employees out into a confused and cheerless world. But you, as an employer, can do something *now* to help shape the destinies of your people. Scores of business heads have adopted the Voluntary Pay-roll Allotment Plan as a simple and easy way for every worker in the land to start a *systematic* and *continuous* Defense Bond savings program.

Many benefits . . . present and future. It is more than a sensible step toward reducing the ranks of the post-war needy. It will help spread financial participation in National Defense among all of America's wage earners.

The widespread use of this plan will materially retard inflation. It will "store" part of our pyramiding national income that would otherwise be spent as fast as it's earned, increasing the demand for our diminishing supply of consumer goods.

And don't overlook the immediate benefit . . . money for defense materials, quickly, continuously, *willingly*.

Let's do it the American way! America's talent for working out emergency problems, democratically, is being tested today. As always, we will work it out, without pressure or coercion . . . in that old American way; each businessman strengthening his *own* house; not waiting for his neighbor to do it. That custom has, throughout history, enabled America to get things done *of its own free will*.

In emergencies, America doesn't do things "hit-or-miss." We would get there *eventually* if we just left it to everybody's whim to buy Defense Bonds when they thought of it. But we're a nation of businessmen who understand that the way to get a thing done is to *systematize* the operation. That is why so many employers are getting back of this Voluntary Savings Plan.

Like most efficient systems, it is amazingly simple. All you have to do is offer your employees the convenience of having a fixed sum allotted, from each pay envelope, to the purchase of Defense Bonds. The employer holds these funds in a separate bank account, and delivers a Bond to the employee each time his allotments accumulate to a sufficient amount.

Each employee who chooses to start this savings plan decides for himself the denomination of the Bonds to be purchased and the amount to be allotted from his wages each pay day.

How big does a company have to be? From three employees on up. Size has nothing to do with it. It works equally well in stores, schools, publishing houses, factories, or banks. This whole idea of pay-roll allotment has been evolved by businessmen in cooperation with the Treasury Department. Each organization adopts its own simple, efficient application of the idea in accordance with the needs of its own set-up

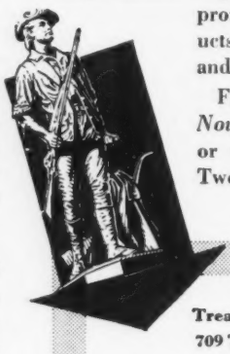
No chore at all. The system is so simple that A. T. & T. uses exactly the same easy card system that is being used by hundreds of companies having fewer than 25 employees! It is simple enough to be handled by a check-mark on a card each pay day.

Plenty of help available. Although this is *your* plan when you put it into effect, the Treasury Department is ready and willing to give you all kinds of help. Local civilian committees in 48 States are set up to have experienced men work with you just as much as you want them to, and no more.

Truly, about all *you* have to do is to indicate your willingness to get your organization started. We will supply most of the necessary material, and no end of help.

The first step is to take a closer look. Sending in the coupon in no way obligates you to install the Plan. It will simply give you a chance to scrutinize the available material and see what other companies are already doing. It will bring you samples of literature explaining the benefits to employees and describing the various denominations of Defense Savings Bonds that can be purchased through the Plan.

Sending the coupon does nothing more than signify that you are anxious to do *something* to help keep your people off relief when defense production sloughs off; *something* to enable *all* wage earners to participate in financing Defense; *something* to provide tomorrow's buying power for your products; *something* to get money *right now* for guns and tanks and planes and ships.



France left it to "hit-or-miss" . . . and *missed*. *Now* is the time for *you* to act! Mail the coupon or write Treasury Department, Section A, 709 Twelfth St. NW., Washington, D. C.

FREE - NO OBLIGATION

Treasury Department, Section A,
709 Twelfth St. NW., Washington, D. C.

Please send me the free kit of material being used by companies that have installed the Voluntary Defense Savings Pay-Roll Allotment Plan.

Name _____

Position _____

Company _____

Address _____

This space contributed by TEXTILE WORLD

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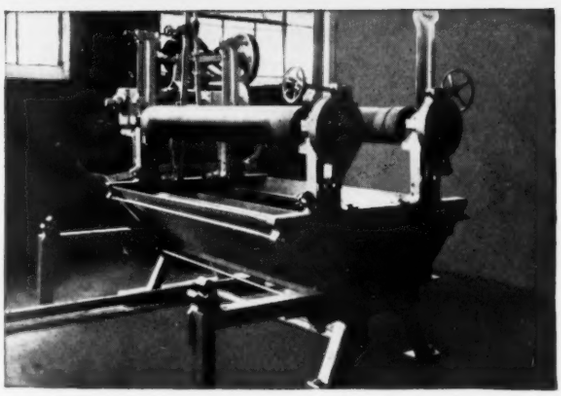
The SERVICE You'll Get is Truly STAINLESS

The BOND You'll Get is Truly INSEPARABLE

"A Borg-Warner Product"



Dye Jig of IngAclad. Fabricated by Sheet Metal Engineering Co., Chicago, for Holliston Mills, Kingsport, Tenn.

10 Years in Actual Use
Prove the Dependability of...

INGACLAD
STAINLESS-CLAD STEEL

Today, many manufacturers and fabricators are finding that IngAclad meets every requirement for the stainless service they need, and at much lower cost. They are also finding that if they enjoy a priority rating, they can, in many cases, obtain IngAclad when it would be impossible to secure the solid stainless metal. Installations that have given continuous service for the past 10 years prove you take no chances when you specify or use IngAclad Stainless-Clad Steel.

Write for special IngAclad Folder and Prices

INGERSOLL STEEL & DISC DIVISION • BORG-WARNER CORPORATION
310 South Michigan Avenue, Chicago, Illinois • Plants: Chicago, Ill.; New Castle, Ind.; Kalamazoo, Mich.

So that Wings may come to Production

Through wide-flung doors, Janus* looks out on a nation unified for production—and on the Engineer *planning and doing* so that wings may come to production.

To the Engineer, time is always important, but transcendently so in a period of stress. It is part of his training to measure accomplishment against the drumbeat of time.

He measures accomplishment not just in terms of construction and production, but against factors like maintenance and obsolescence of building, of process, of product, and against the changing needs of a nation.

It is in these factors that the enduring value of his vision and experience express themselves to your advantage.

* The doors to the temple of Janus were never closed, except in time of complete peace. He had two opposite faces, so he could look back to the past and on to the future. Because the first hour of the day, the first day of the month and the first month of the year (January) were dedicated to him, he symbolized the period of planning.

Engineers for 40 years

J. E. SIRRINE & COMPANY
GREENVILLE SOUTH CAROLINA

INDUSTRIAL PLANTS · PLANS AND DESIGNS · POWER
INDUSTRIAL SURVEYS · WATER SUPPLY AND TREATMENT

DOUBLE EXTRACTOR PRODUCTION WITH TOLHURST SUPREX

Recent time trials and production tests made in a well-known mill under identical conditions showed the following results: Hourly production of TOLHURST SUPREX was 1370 lbs. against 730 lbs. for a standard type extractor. Complete operating cycles were 8.2 minutes for the SUPREX and 16.4 minutes for the standard type. TOLHURST SUPREX required only 4.2 minutes actual running time to obtain 40% moisture retention. The standard type extractor required 12.4 minutes to obtain the same result. Proportionate savings can be effected on other textiles. Let us prove these claims through tests on your materials. Use the handy coupon below to get complete information!

TOLHURST
CENTRIFUGAL DIVISION
American Machine and Metals, Inc.
East Moline, Illinois

FILL IN — MAIL TODAY!

TOLHURST CENTRIFUGAL DIV.
East Moline, Ill. Tex. W. Jan.

Yes Please send me details on TOLHURST SUPREX for increasing production.

Name_____
Address_____
City_____ State_____

It's the POINT
UNBRAKO
SELF-LOCKING
HOLLOW SET SCREWS
with the
KNURLED POINTS
By ordering standard "Unbrako" sizes whenever possible you will aid prompt deliveries and help us to maintain peak output. Thanks.

It's the Knurled "Unbrako" cup point that does the trick . . . the point that more and more mills are using exclusively to prevent the maintenance costs and delays caused when ordinary set screws fail to hold.

Tightened up no more than usual, these famous "Unbrako" Self-Lockers come to grips with the severest vibration . . . HOLD TIGHT no matter what! And the Knurled point retains its ability to lock regardless of how often applied.

There's one good reason why you should specify "Unbrako" Self-Lockers on your next order—it pays! Try it.

The KNURLING of Socket Screws originated with "UNBRAKO" years ago.

STANDARD PRESSED STEEL CO.
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Req. U. S. Pat. Office
UNBRAKO *Screw Products*
Pat'd and Pat's Pend.

Are You Going to be Short of Chlorine Bleach?

. . . Not if you decide now to make YOUR OWN supply this cheap, sure way!

The Shortage Will Strike Soon

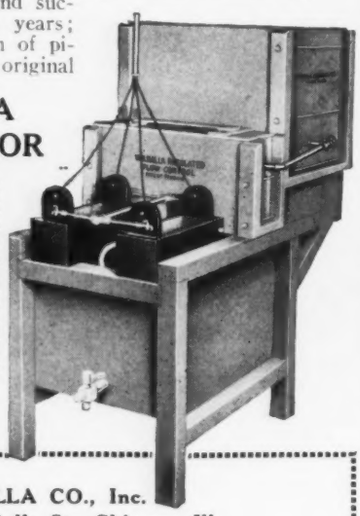
Chlorine is being taken for war uses. Civilian supplies are rapidly being cut. Textile operators who have been using prepared bleaching solutions or powders may soon find the necessary chemicals hard to get.

Here's a Safe, Sure Answer

Vitally important it is to have a bleaching agent that is effective, yet harmless to cotton fabrics and yarns. Here is the answer: install a Valhalla Chlorinator. Make your own highly effective sodium hypochlorite solution (NaOCl), ready to use and all you want, at low cost.

The only materials needed are salt, water and direct current. The Chlorinator is simple, almost automatic in operation. An improved type of the same machine supplied to textile mills and successfully used for 20 years; made by the same firm of pioneers in this line; the original

VALHALLA CHLORINATOR



The hypochlorite solution produced by this machine, used at moderately low temperatures, acts with great effect as a bleach, sterilizer and deodorant. Leaves no odor; will not tender cotton goods; always leaves them sweet and clean. Safe, economical. With a Valhalla Chlorinator in the plant you can forget bleach shortages and be delighted with your results!

Whether your interest is that of a possible user or distributor, we suggest your sending at once for detailed information.

The Coupon is for Your Convenience

THE VALHALLA CO., Inc.
231 So. La Salle St., Chicago, Ill.

Please send me your free folder on how to make sodium hypochlorite bleach in the plant.

Our plant has ☐ direct current.....volts.

(please check) ☐ alternating current.....volts.

(Alternating current calls for a small motor-generator to convert to direct.)

Name .....

Company .....

St. Address.....

City .....State T1

large or small —special or routine

Regardless of whether your work demands special application or routine handling—whether it be 500 pounds or 40 tons—whether an electric hoist, a hand-operated high-speed hoist, traveling crane, or monorail trolley—Wright engineers know how to solve your problem *economically*.

Here are three things you get in every **WRIGHT HOIST:**

1. **SAFETY.** The load chain has a safety factor of 7 to 1. The bottom hook which is drop forged from special steel, acts as a safety governor, in that it gives warning of overload by slowly opening. These hooks possessing an unusual degree of ductility will straighten out before any part of the hoist is damaged, plus acting as a warning to the operator.

2. **EFFICIENCY.** **WRIGHT HOISTS** are fast, smooth and positive in action because of scientifically engineered design.

3. **DEPENDABILITY.** **WRIGHT HOISTS'** rugged and precision design assures year-in and year-out durability and the very minimum of maintenance cost.

Let Wright engineer your hoisting and crane problems. Work through the Wright distributor in your city. You'll find him listed in the classified telephone book.

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SAFETY · MAINTENANCE · EFFICIENCY
WRIGHT HOISTS

¼ to 50 tons

AMERICAN CHAIN & CABLE COMPANY, INC.
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ACCURATE FLOW CONTROL

means uninterrupted production from the assembly line.....

LUNKENHEIMER VALVES

Assure accurate — positive control

ESTABLISHED 1862

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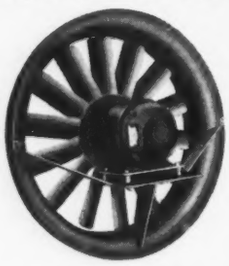
LINE OF VENTILATING EQUIPMENT FOR TEXTILE PLANTS

DeBothezat offers three types of Ventilating Equipment particularly adaptable to textile plants. All units incorporate the Axial-Flow fan principles which offer maximum savings in space, weight and power. The advanced design of these fans results in unusually high mechanical and static efficiencies plus non-overloading power characteristics. Use handy coupon below to get FREE literature on DeBothezat Ventilating Equipment for your plant.

FOR DYE HOUSE



AXIAL-FLOW PRESSURE FANS are available in a complete series of volume and pressure models. Sizes range from 8 in. through 10 ft. in diameter. Arranged for direct or V-belt drive. Guaranteed performance ratings!

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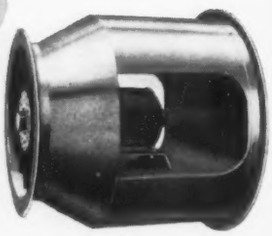

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"HY-V" AIR JET MAN COOLERS for blowing a column of air on men who are exposed to extreme heat. Combines high-efficiency axial-flow fan with conversion nozzle. Arranged for column or floor mounting. "Air Jet" can be pointed in any direction in horizontal or vertical plane.

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Please send me FREE Bulletins as checked:
☐ Axial-Flow Pressure Fans, ☐ Bifurcators,
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Entering our
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More than ever—we are at your service!

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Now, of all times, utilize those special DIAMOND FINISH lubricated rings that give machinery FAR GREATER PRODUCTION THAN EVER BEFORE on numerous operations — sometimes as much as 60% increase! And on any operation, new rings with our easy-starting "Diamond" polish customarily step up production a good 10% over worn, wavy rings. Time is precious. Let DIAMOND FINISH help you make every machine hour EXTRA PRODUCTIVE!

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Makers of Spinning and Twister Rings since 1873

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Fine Woolen and Merino Yarns

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Cotton Yarn and Warps . . Single or Ply . . White or Colored . . Carded . . Combed

Novelty yarns—of cotton, worsted, wool, mohair, rayon, silk — in all fashionable combinations and effects and in many original effects. Write for samples.

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Standard Grades — Lustrous — Delustred—Superfine

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Write Us
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The economies of ***Long Draft*** spinning can be lost if yarn is damaged by dripping leaking oil. Such oils creep from roll necks to get on leather and cork cots.

Most mills on long draft use NON-FLUID OIL for top and bottom rolls and saddles of spinning frames. It protects yarn and cuts expense by outlasting oil many times over.

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Better Lubrication at Less Cost per Month

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Specializing in Textile Costs and Operating Methods for More Than a Quarter of a Century

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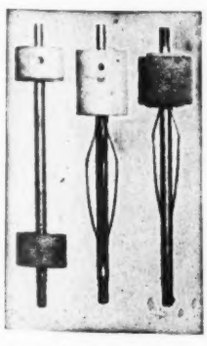
SPECIAL REPORTS



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Hard fibre tips for all types of spindles—require no oiling—renewable at little cost. Use them for cleaner yarn and better wound bobbins. Write for sample of these and other Wayne money-saving textile machine parts and suppiles.

Spindles of all types. Wood, head, steel head, cork covered heads and hard fibre or hardened steel top spindles. Let us send you a sample of the type you prefer. Save money by buying from Wayne.

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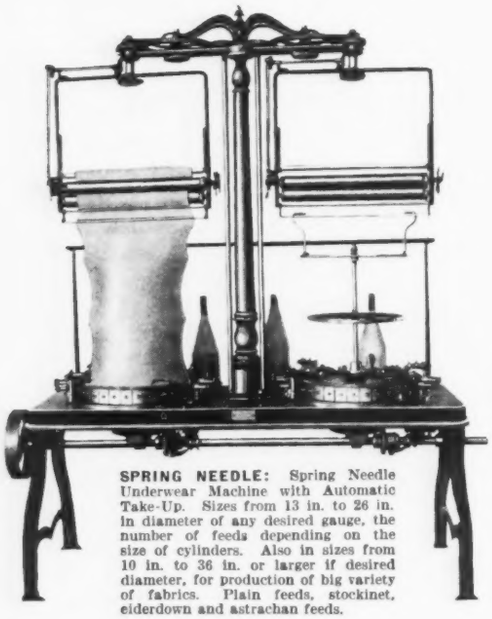
KNITTING MACHINES

meet the need for Speed—
for Quality and Low Cost



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CRANE Knitting Machines meet the demands of rapidly changing patterns and styles. Their middle name is *versatility* . . . plus smooth, fast running operation that eliminates expensive stops. Among their exclusive features are Patented hardened Wing Burr Wheels and patented Thread Stop Motion. There's many a Knitting Mill in which batteries of Cranes are the mainstay of production.

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—and how . . . just ***WRITE***

CRANE Improved Automatic
3 Colored

Improved Automatic 3 Colored Plain Stripes. Made in sizes from 7⅝ in. to 20⅝ in. inclusive, of any desired gauge. Measurements are back to back of cylinder needles. Knit fabrics for bathing suits, theatricals, athletic goods. Crawford stop motion applied when requested.

1870 **CRANE** 1941

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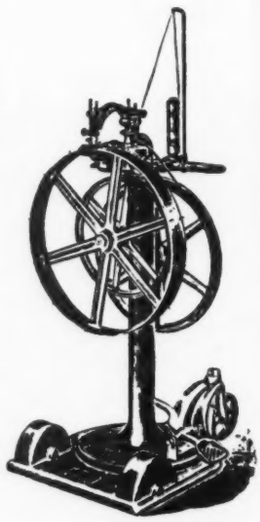
KNITTING MACHINERY

A Jack-of-all-Sewing For Finishing

The Dinsmore No. 9 Portable Rotary Foot Power Sewing Machine is used for handling cloth, thick or thin, wet or dry. Easily shifted to any part of the mill. Positive-acting . . . all gears have machine cut teeth . . . our Improved "DN" Sewing Head is standard equipment. Rubber tire floor wheels. *Write us.*



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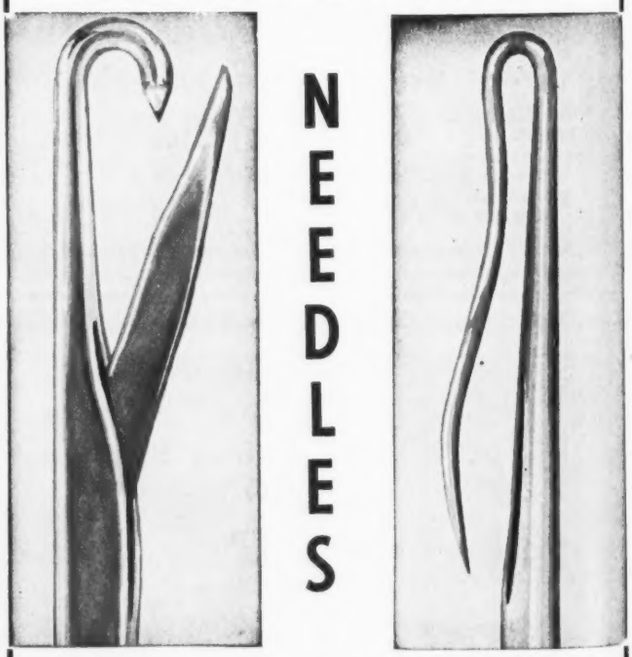
Manufacturers of
Quality LATCH and SPRING-BEARD



NEEDLES

also
***Manufacturers of* THE FAMOUS COOPER CIRCULAR SPRING-NEEDLE RIB KNITTING MACHINES**

HOSIERY GOES "All-American"

Nylon, rayon, cotton . . . American made, American grown . . . will be the basic yarns for the new *All-American* hosiery from now on. Use of these yarns in fine gauges, singly or in combination, entails many new problems for manufacturers . . . problems which will *all* be solved with typical American ingenuity and speed. In fact, *certain* of these production difficulties were licked almost before they were recognized, by the Wildman Single-Head, Single-Unit, Full-Fashioned Hosiery Machine.

This "machine of the hour" . . . handles the finest gauge synthetics and cottons, in any combination, with absolute uniformity . . . it attains *perfect matching* of legs and feet, because the entire stocking is knit in one continuous operation. Complete details will be sent on request. Write, wire or telephone.

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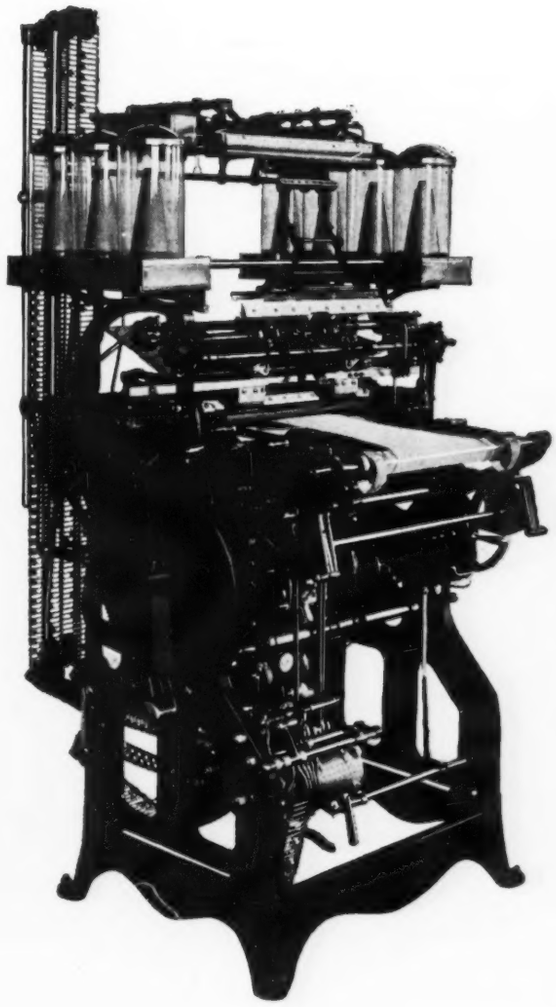

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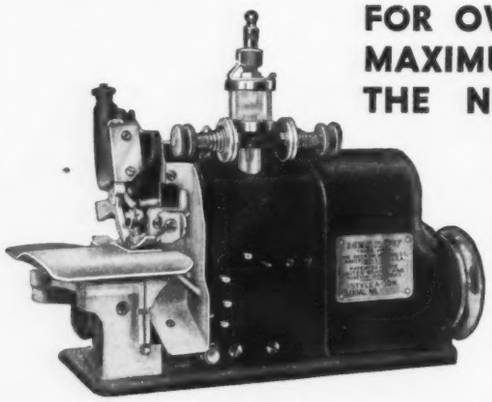
SINGLE-HEAD, SINGLE-UNIT, FULL-FASHIONED HOSIERY MACHINE

Established 1838 **MERROW** **Incorporated 1894**



FOR OVERSEAMING AND OVEREDGING WITH MAXIMUM EFFICIENCY — MODERNIZE WITH THE NEW MERROW CLASS A MACHINES

The result of several generations of specialized effort in the industrial sewing machine field—combining quality production with high speed and low operating cost to a greater degree than ever before.

WRITE FOR DETAILS AND LET US DEMONSTRATE THESE MACHINES ON YOUR OWN FABRICS.

ALSO PLAIN CROCHET AND SHELL STITCH MODELS FOR ORNAMENTAL EDGE FINISHING AND CLASS 60 MACHINES FOR BUTT SEAMING

200 VARIETIES FOR 200 PURPOSES

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Acme Products

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Speak for themselves

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CIRCULAR SPRING NEEDLE

KNITTING MACHINES

FOR PRODUCING

UNDERWEAR	OVERCOATS
SWEATERS	TERRY CLOTH
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KNITTING MACHINES

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SINCE 1846 SYRACUSE, N. Y.

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Yarns

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Complete color assortments

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WE'VE LEARNED A LOT IN OUR 50 YEARS!

50 years of specialized experience in producing tanks and tubs for the textile industry *has taught us some things that will be valuable to you!*

Let us tell you about our complete Caldwell service, which includes Stainless Steel-lined tanks and tubs—round, rectangular and special shapes. *Catalog on request.*

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For Circular, Full Fashioned, Tricot and Milanese Knitting Frames, also Narrowing, Stand, Transfer Points and Welt Hooks for Full Fashioned Machines: Slides, Sinkers, Jacks, Guides or Flat Eyes, Sley and Milanese Points, Transfer Points or Quills, etc.

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NEW BRUNSWICK NEW JERSEY

"gawsh—

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The new fibres—in all their new constructions—whose vibrant beauty, exciting novelty and variety, stirred the holiday trade beyond expectations foretell a year of great profit probabilities. . . with emphasis, naturally, on brands that feature fullest measure of enduring beauty and pleasing wearability . . . . And, it pays now, more than ever, to say the fabric is DuraBeau finished.

SILK, NYLON, RAYONS, COTTON— alone — or in any combination — are

DuraBeau* FINISHED

FOR EXTRA BEAUTY, ADDED WEAR

*Reg. U.S.A. and Canada

Scholler Bros., Inc. · Mfrs. of Textile Soaps, Softeners, Oils, Finishes Collins and Westmoreland Sts., Phila., Pa. · St. Catharines, Ont., Can.

"MEON"

The WONDER *Product*

MEON "T" for conditioning cotton yarns is more than a penetrant or wetting agent. MEON "T" is hygroscopic, and by virtue of its property of breaking down surface tension, insures rapid absorption. MEON "T" permanently sets the twist and removes the kinks. Any amount of water can be imparted and retained by the use of MEON "T". Therein lies a *tangible value* for the manufacturer. . . .

Can be Used in

ANY CONDITIONING MACHINE

1 gallon MEON "T" to 99 gallons water

- INSURES SMOOTH WEAVING
- INCREASES BREAKING STRENGTH
- A RUST INHIBITOR
- WILL NOT AFFECT THE BOBBINS
- ECONOMICAL
- EFFICIENT

Use it on your Tyeing-in Machine

BORNE SCRYMSER COMPANY

Originators of the BRETON MINEROL PROCESS for FIBRE CONDITIONING

ESTABLISHED 1874

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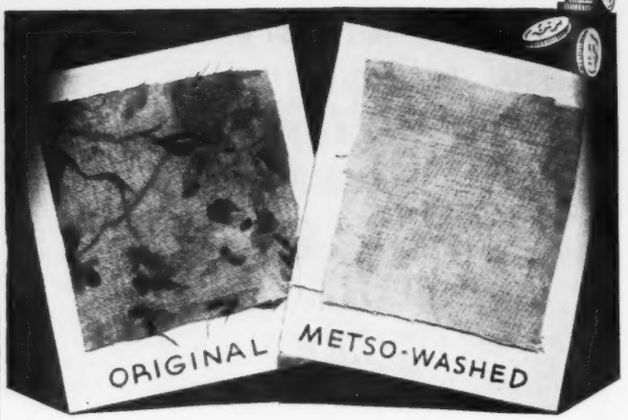
SAVE WITH IMPROVED WASHING ACTION



TRY a Metso Detergent on a stubborn cleaning job in your mill and see the difference. Take, for instance, back gray washing. Metso removes all the loose dyes and leaves the back grays soft and absorbent. Metso-washed grays last longer.

One outstanding function of Metso Detergents is the ability to prevent removed dirt from again depositing itself on the clean cloth. May we tell you more about this unique Metso advantage? No obligation.

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STANDARD SILICATES

YOUR BEST CHOICE FOR:

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- √ Kier-Boiling
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GENERAL OFFICES: PITTSBURGH, PENNSYLVANIA

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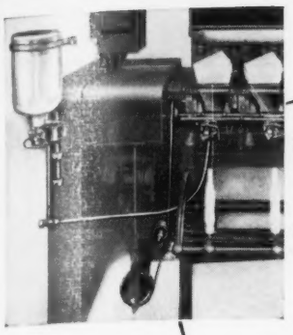

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USE *Laurel* EMULSIONS

Developed to meet the need for even-running, better knitting yarns, Laurel Emulsions properly condition and soften carded and combed yarns, mercerized, dyed and bleached yarns . . . speed up twist-setting, give you proper regain and better knitting quality. Easy to apply over roller troughs on cone winders, quilling frames or twisters. Laurel Emulsions—favorites for nearly two decades with leading spinners, converters and knitters.

Let us arrange a trial in your plant.

Laurel SOAP MANUFACTURING CO., Inc.

SOAPS • OILS • FINISHES

Wm. H. Bertolet's Sons — *Established 1909*
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CORN STARCHES, DEXTRINES, GUMS, CORN SUGARS & SYRUPS
NEW YORK, N. Y. - - - - CEDAR RAPIDS, IOWA
SOUTHERN OFFICES: ATLANTA, GA. - - - - SPARTANBURG, S. C.

John:
Douglas Crown Thin Boiling Starch is made in all fluidity ranges to suit each individual mill's requirements. Let's arrange for a trial order of the type recommended for our purposes.
Jim

FOR VICTORY!

THE country is now at war and so it's — "on to Victory". • The Onyx organization is pledged 100 per cent with all its resources and equipment in this fight for ultimate Victory. • To all manufacturers engaged in supplying the armed forces or the buying public with textiles—Onxy extends its modern facilities and experienced personnel in complete cooperation. • Production is imperative today. Step up your production with Onyx processing and finishing compounds. They are bringing to many manufacturers not only more but better, much better production. Use them for your profit.

For more and better processing and finishing—write us immediately.

onyx

ONYX OIL & CHEMICAL CO.
JERSEY CITY, N. J.
Providence, R. I. Chicago, Ill.
Charlotte, N. C.

XYNOMINES PHI-O-SOL REPEL-O-TEX
ETERNALURE ONYXSAN

The President Says:

"Our problem is to see to it that there is no idle critical machine in the United States. The goal should be to work these machines 24 hours a day and 7 days a week, relieving the machines only for such time as is required for overhauling and repair."

—FROM PRESIDENT ROOSEVELT'S LETTER TO THE OFFICE OF PRODUCTION MANAGEMENT.

If the output of any large or small mill having a part in war production, is curtailed or handicapped for lack of textile equipment that *you have*— and *don't need*—then *you* have an *"idle critical machine"*.

You, and all other readers of *TEXTILE WORLD* having such equipment, can help war production—AND EACH OTHER—by bringing such available equipment to the attention of those who need it, AT ONCE. You can do so through dealers in used equipment. They are recognized sources of distribution and may be able to place the equipment immediately. If the equipment you release needs reconditioning, most dealers have the facilities and experience to do so. Or, if you want to contact user-buyers direct, you can do so effectively, and at small cost, through advertising in the Searchlight Section of this publication.

The Searchlight Section of *TEXTILE WORLD* is recognized throughout the textile field as the "market place" for buying and selling surplus used—or new—equipment, as well as for featuring employment and business opportunities offered or wanted. It is consulted regularly by prospective buyers of surplus equipment offered by dealers or available from other operations.

Surplus idle equipment—at any time—is an economic liability. It frequently occupies needed space. It often depreciates in value, possibly from rust or becoming obsolete through being held for an extended period. Right now it may also represent badly needed—but unused—production capacity for some other mill.

By releasing all the surplus idle equipment you have NOW you can not only aid war production but benefit yourself by selling in an active market and converting an economic liability into a cash asset.

ABP **TEXTILE WORLD** ABC

MILL STARCH

The Weaver's Friend

- Always Uniform
- Dependable
- Carries Weight Into the Fabric
- Penetrates Thoroughly
- Boils Thin

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MANUFACTURERS OF

Textile, Laundry

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WRITE US FOR SAMPLES AND QUOTATIONS

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TENTERING and DRYING MACHINERY

HOW OAKITE CLEANING HELPS MILLS ECONOMIZE ON MAINTENANCE!

FOR EXAMPLE:

FAST, EASY WAY TO REMOVE SLIME FROM HUMIDIFYING SYSTEMS

Mills working on Defense Orders know that every minute counts . . . that time saved on maintenance work will be welcomed. Here is a time-saving maintenance "tip" that will help. Keep humidifying systems clean this easier, performance-proved Oakite way.

Circulate recommended Oakite solution through system as directed, allow to soak, then drain and flush out. Dirt, lint and slime deposits thoroughly removed, thereby eliminating choked pipes, clogged spray heads. Cost is low, too. Ask us about this and other money-saving cleaning methods on mill maintenance. No obligation . . . write today!

OAKITE PRODUCTS, INC., 42 Thames Street, New York, N. Y.
Representatives in All Principal Cities of the U. S. and Canada

OAKITE Specialized **CLEANING**
MATERIALS · METHODS · SERVICE — FOR EVERY CLEANING REQUIREMENT

SEARCHLIGHT SECTION

EMPLOYMENT • BUSINESS • OPPORTUNITIES • EQUIPMENT—USED or RESALE

UNDISPLAYED RATE:

10 cents a word, minimum charge $2.00.

(See ¶ on Box Numbers.)

POSITIONS WANTED (full or part-time salaried employment only), ½ above rates.

PROPOSALS, 50 cents a line an insertion.

INFORMATION:

BOX NUMBERS in care of any of our New York, Chicago or San Francisco offices count 10 words additional in undisplayed ads.

DISCOUNT of 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

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The advertising rate is $5.50 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches—to a page. T.W.

NEW ADVERTISEMENTS received by 10 A. M. January 28th will appear in the February issue, subject to limitations of space available.

POSITIONS VACANT

EXPERIENCED FIXERS on any type seamless hose machines. Ainslie Knitting Machine Co., 750 Grand Street, Brooklyn, N. Y.

TWO MECHANICAL DRAFTSMEN wanted, preferably experienced in automatic packaging or cotton processing equipment development. P-62, Textile World, 520 N. Michigan Ave., Chicago, Ill.

EXPERIENCED CIRCULAR KNITTING Machine Fixers wanted for Heavy Gauged Machines. P-63, Textile World, 330 W. 42nd St., New York, N. Y.

EXCELLENT OPPORTUNITY! For man with creative ability, to take charge sample making, cost calculation novelty twisted yarns. State experience and salary desired. Replies treated confidentially. Reply to P-64, Textile World, 330 W. 42nd St., New York, N. Y.

POSITIONS WANTED

NARROW FABRICS. Position Wanted as superintendent, non-elastic tapes, heavy webbing, elastic fabrics. Experience includes all departments. PW-25, Textile World, 330 W. 42nd St., New York, N. Y.

PILE FABRIC DYER. 41 years old, have 19 years of practical experience in pile fabric dyeing, going into auto and furniture upholstery draperies including imitation seal skin, cloaking and transparent velvet, involving rayon, cotton, tussah, silk, mohair, wool and blends of all types. Have the practical knowledge of finishing these various fabrics. Available immediately. References are of the best. PW-65, Textile World, 330 W. 42nd St., New York, N. Y.

SUPERINTENDENT OR TECHNICIAN, Rayon and Silk, plain fancy and Jacquard experience, good record north and south, desires position. Zuerich graduate age 39. PW-66, Textile World, 330 W. 42nd St., New York, N. Y.

BUSINESS OPPORTUNITY

Plant Wanted

Small wool spinning plant. Capacity about 10,000 lbs. per week. State description and location. BO-67, Textile World, 330 W. 42nd St., New York, N. Y.

Finishing Expert Available

Will go anywhere where trouble exists. Past master on carbonizing, fulling, scouring, napping, shearing on woolen & worsteds, both woven and knit.

GEORGE L. DOCKRAY
1219 S. 52 St. Sar-8236 Phila., Pa.

FOR SALE

Brick Factory Building

Fully sprinklered, mill construction, 75,000 square feet floor space, additional land, railroad siding, river frontage, excellent water supply; immediate occupancy; price and terms very reasonable to proper party; located Warren, Mass., between Springfield and Worcester; desirable labor supply available.

BO-61, Textile World
330 West 42 St., New York City

TEXTILE EDITOR

Textile school graduate or college man with practical textile mill experience wanted on editorial staff of textile publication. Should have good technical background, editorial ambition, and ability to write. Send complete information. P57, Textile World, 330 W. 42nd St., New York, N. Y.

Over Forty Years of Dependable and Confidential EMPLOYMENT SERVICE
for textile mills, converters and selling houses requiring managers, superintendents, stylers, designers, salesmen, overseers, second hands, fixers, etc. 'Phone, wire or write us your personnel requirements.
CHARLES P. RAYMOND SERVICE, Inc.
Phone: Liberty 6547 **294 Washington Street, Boston, Mass.**

FOR SALE

8 Loom Upholstery Plant

Jacquards recently tied up.

Priced for quick sale

FS-72, Textile World
330 West 42nd St., New York City

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PATENT YOUR IDEAS
send a Sketch or Model of your invention for
CONFIDENTIAL ADVICE
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Product Engineering
Textile World
Transit Journal

For advertising rates or other information, write:

Departmental Staff
McGraw-Hill Publishing Co., Inc.
330 W. 42nd St., New York City

Equipment Wanted Advertising—Page 164

"To win the War— and win the Peace"

In our sober realization of the necessity for unselfishness in our grave national crisis, we pledge our utmost effort and strength in the solemn determination "To Win the War and Win the Peace."

We feel that all of us can do no less than our heroes at Valley Forge, Gettysburg, Chateau Thierry, Pearl Harbor, Wake, Midway, and the Philippines.

Let us march forward together—On to Victory!

Buy Defense Bonds

FOR SALE

1—48" Farmer 6-bowl Calender
1—50" Perkins 3-roll Hydraulic Calenders, Chrome Plated Rolls
1—50" Van Vlaanderen 3-roll Calender
2—sets 3-cyl. Furbush Woolen Cards 48" x 60" with camel back feeds and Barker condensers
1—60" Van Vlaanderen Doubling, Tubing & Measuring Mche.
1—set of 16 Textiles 23" x 60" Dry Cans, vertical frames
1—set of 29 Textile Tinned Iron Dry Cans, 23" dia. x 69½" face
1—set of 23 Granger Cooper Dry Cans, 23" dia. x 88" face with horiz. frames
1—150 yd. Kenyon Return Tenter Dryer, 65" opening
1—40 yd. Kenyon Return Tenter Dryer, 80" opening
1—100 yd. Kenyon Return Tenter Dryer with P & S Housing with 26 to 89" opening
2—84" Proctor & Schwartz Loop Dryer
36—Phila Ladies Hosiery Drying-Forms with adjustable toe sizes 8½ to 11
150—Phila Ladies Hosiery Drying Forms with tables sizes 8½ to 11
1—Hurricane Loop Dryer, 7'8" wide x 34'2½" long x 6'3½" high, inside dimensions
1—20 lb. Rochester All Monel Metal Pocket Rotary Hosiery Dyeing Mach. mtr. dr.
1—50 lb. Smith Drum 4-pocket all Monel Metal Rotary Hosiery Dyeing machine, mtr. dr.
1—100 lb. Smith and Drum all monel metal 3-Pocket Rotary Hosiery Dyeing, mtr. dr.
1—28 stick Klauder, Weldon Skein Dyeing Mach. hoist type, copper lined
2—42" Hercules, Stainless Steel Baskets, V-Belt, mtr. dr. Extractors with Timers and Safety covers
1—40" Textile Ribbon Finisher with Quetch and Cans
1—60" wide, 3-cyl. 30" dia. Garnett, automatic with breast, chain driven workers, automatic feed, V-belt motor drive, 3/60/550 roller bearings, clothing good
3—Schultz Fulling Machines

FOR SALE

10—20" cyl. Wildman Style FBS-S Circular Knitting Machines, equipped with FWT-12 end, duplex furnishing Wheel with 1,728—#18/15 Needles, ¾ H.P., G.E. Textile Mill Motor, 1800/1760 RPM, 440 volts, 60 cy, 3 ph, A.C.
6—22" as above with 1,908—#18/15 Needles
5—23" as above with 1,922—#18/15 Needles
17—26" as above with 2,268—#18/15 Needles
1—23" Wildman 648 Needle, 8 feeds
1—26" Wildman 576 Needle, 8 feeds
80—42" R. S. Draper Model K Automatic Looms, 20 harness, mtr. dr.
12—72" C & K (4 x 4) Tapestry Looms with 130h Jacquards, mtr. dr.
12—92" C&K 4x1 Box Automatic Looms, 20 harness head, warp stop motion, mtr. dr.
10—92" C&K 4x4 Box Looms
4—120" C&K (4x4) 25 harness Looms
1—65" Van Vlaanderen Palmer
1—67" Morrison Palmer with 2-roll Quetch
1—65" Voelker Rotary Cloth Press
1—66" Gessner Rotary Cloth Press
1—8 color Van Vlaanderen Ribbon Printer
1—42" Rice, Barton & Fales, 7 color Printing Mche. with Dry Cans, etc.
2—60" Smith & Furbush Shredders
1—43" Rice, Barton & Fales 8 color Printing Mach. with Dry Cans, etc.
1—54" Textile Mach. Co. 8 color Printing Mach. complete with 2—G.E., 35 HP motors, 220 V., 60 cyl., 3 ph. 415—1250 RPM
1—52" Waldron 12 color Printing Mach., complete with Westge slip ring, motor, 50 HP, V., 60 cyl., 2 ph, 870 RPM
1—57" Van Vlaanderen 3 Roll Quetch
1—78" P & W Model A, 2-blade Shear
1—Pair of 60" Squeeze Rolls
1—40' Textile Finishing Tenter Frame with Housing, with 115" opening
1—90' Butterworth Clip Tenter 50" opening, mtr. dr.
150—128 spindle Fletcher Double Deck Upstroke Twisters, 7" spindle spacing, each equipped with 2-3 HP motors and Fletcher oil well non-bendable type spindle and balloon separators

MACHINERY LIQUIDATING CO., INC.

31-33 WEST 42nd STR. NEW YORK CITY

DOMESTIC AND EXPORT CABLE ADDRESS "LIQUIDATE," NEW YORK

INSPECTORS . . . . . APPRAISERS . . . . . LIQUIDATORS

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1—Model #30 Foster Cone Winder taking standard 6" Paper Tubes — 100 Spindle—Rebuilt 1937—Mostly New Cams—Dodge V-belt Drive—Latest Model Slub Catcher—Tension Bars.

2—Whitin Quillers—(Chain Drive) 378 End 2½" Gauge, Item #445.

1—Parks & Woolson 66" ACW type of Measuring Machine.

1—Whitin 304 End Quiller 3¾" Gauge — Item #6277.

2—MacBeth Evans Color Matching Units — Item #6566.
2½" Paper Tubes—55" Long—¼" Walls.

2—Simplex Winder Company Inspection Perches for 60" Goods — Item #1213.

1—Pile End Sewing Machine (La Piquriere)—Item #1529.

1 set—Spreader Rolls for Dye Kettles—Stainless Steel, taking 60" cloth. Item #6083.

Address all inquiries to:

Collins & Aikman Corp.
Plant F, Leverington Ave. & Wilde St.
Manayunk, Philadelphia, Pa.
Telephone Greenwood 6800

FOR SALE

1—10 ft. Tight Washer, rubber rolls, 18" dia. 4—Dry Cans, Copper 90"x27".
1—Johnson 5 Can Slasher, Copper Tinned Cans, 52" face, Reeves Drive.
1—Amer. Laundry Extractor, 28" bronze basket, M.D., 220 V.
1—74" Simpson Winder, 2 roll.
50—Univ. Coners Complete, M. D. in pairs.
Bobbins-Spools Skewers. Motors—Etc.
Sole Agents for Smith Yarn Twist Tester

BTS
BAY STATE TEXTILE CO.
220 HARTWELL STREET • FALL RIVER, MASS.

NORMAN M. McDOWELL
ASSOCIATES
342 E. 142 St. Bronx, N. Y.
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FOR SALE

12—Shears, C & M, P & W, Single and Double Blade 60" to 76". Various Types.
2—Gessner Steam Rotary Presses.
10—D.A. Nappers, Cotton, Wool and Knit-Goods. Self Oiling Type.
2—Pin Tenter Frames 20' & 30', 64" to 66" width goods with motors complete.
1—3 roll Steam Calender 52" Face with extra new roll.
1—2 roll Embossing Calender 43" face with 2 extra sets of design rollers (3 designs).
4—Fulling Mills, Single & Double compartment.
2—Windle Doublers 60' and 66" goods.
1—Napper Grinder for 84" rollers complete.
1—E & H Folder 46", 1¼ yd. folds with motor.
5—Quetches 42" to 58" 2 & 4 roll units.
2—Toledo Scales, Platform and Movable.
2—D.A., C & M Brushing Machines 2 & 4 rolls.
1—9 Can Ribbon Finishing Unit with 3 roll Quetch 40" face.
3—Dinsmore Rotary Sewing Machines.
2—Extractors—42" & 48" Copper tinned Basket, motor driven.

Only a few of the many units available
Send for our complete catalog.
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USED OR REBUILT
Spinning—Weaving—Dyeing
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UNDERWRITERS FIRE PUMPS

5—1,000 GPM Centrifugal Fire Pumps with AC motors either 220-440-2200v.

TIDEWATER EQUIPMENT & MACHY. CORP.
305 Madison Ave. New York, N. Y.

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1—70", 3 Bowl Van Vlaanderen Calender Reasonably priced for immediate delivery.

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Phone JEFferson 4771

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4—92" C&K Automatic Looms
1—Saco Lowell Hot Air Slasher
1—3 Cylinder Woolen Card 60x48 tape Condenser
5—Johnson & Bassett H'by Pattern Mules
1—Columbia-Green Single Acting Napper
3—D&F Dressing Frames
1—Windle Winding & Doubling Machine
COMPLETE MODERN WOOLEN MILL EQUIPMENT including 2 International Business Machine Time Clocks, Stock & Piece Dye Kettles, Loom supplies, Motors and Electrical Supplies, Pulleys, Shafting, Belts, Etc. LARGE STOCK OF RAW MATERIALS.

HUDSON RIVER WOOLEN MILLS
420 Madison Aveue New York City

Attractively Priced
Novelty YARN TWISTERS

7—Collins Novelty Yarn Twisters; 6—180 Spindle and 1—192 Spindle, 2¼" Rings, Tape Drive, belt driven.

FS-69, Textile World
330 W. 42nd St., New York City

FOR SALE
EMBOSSING CALENDARS
and auxiliary machinery.

With 50 sets of rollers all different designs.
Ideal Equipment to start an embossing plant.
FS-44, Textile World
330 West 42nd St., New York City

PRICED FOR QUICK SALE!

10—Paine Winders
16—±50 Universal Coners—Model C & D
1—Lever Bottle Bobbin Winder
4—Davis & Furber Jackspooling Machines, 32½", practically new
3—Carpenter Reels
1—Whitin 40" Card
1—Nasmith Comber 6 Head—11¾" Lap
42—±90 Universal Winders
1—Bushnell Cloth Press
2—Dinsmore Railway Sewing Machines 80" and 100"
1—C & M Cloth Inspecting Machine, Glass Top 48"
10—Amco Duplex Humidifier Heads 220/3/60 AC
2—DeLaval Centrifugal Pumps 5550 gal. per min.—motor drive, no motors
4—Twist Counters

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49 WESTMINSTER ST., PROVIDENCE, R. I.
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HOSIERY EQUIPMENT
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Full Fashioned Hosiery Machines
Special attention to export trade
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National Invisible—Mark Phantom—Fast Marking Machines for sale:—latest air driven type, cost $600 new.
Used average of 6 months.
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HOSIERY MACHINERY

We carry the largest stock of good used and reconditioned equipment in the U. S. A. for seamless—Full Fashion—Dyeing and Finishing—Write for Catalogue.

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508-514 W. Fifth St. Charlotte, N. C.

NEW "SEARCHLIGHT" ADVERTISEMENTS

received by January 28th, will appear in the February issue, subject to limitations of space available.

Address copy to the Departmental Staff

TEXTILE WORLD
330 West 42d St., New York City

FOR SALE

26—42" Draper Model K Auto. Looms, lacey tops.
20—72" Draper Auto. Worsted Looms, M. D.
100—82" Draper Auto. Worsted Looms, M. D.
21—Mason Wet Tape Drive Twisters, 288 sp. each
1—Abbott Auto. Winder, 100 spindles
16—Whitin Model C Cotton Combers
1—Armstrong Cork Cot Buffing Machine

J. H. WINDLE & COMPANY
231 So. Main St. Providence, R. I.
Tel. Gaspee 6464

PERFORMANCE COUNTS!

AND YOU CAN DEPEND ON

"CONSOLIDATED"

TO GET THE EQUIPMENT YOU NEED

TO SELL THE EQUIPMENT YOU DON'T NEED

PRINTING

9—Rice, Barton & Fales Printing Machines, 40" to 64" in width.
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3—Textile Fin. Co. 100-Gal. Copper Steam Jacketed Tilting Kettles, Agitated.
2—Textile Fin. Co. 70-Gal. Copper Steam Jacketed Tilting Kettles, Agitated.
4—Textile Fin. Co. Copper Steam Jacketed Agitated Kettles, 50, 40 & 30 Gals.
1—Textile 3-Nip Grey Washer, 65" rubber on brass rolls.
2—Textile 8-Bowl Full Width Open Washers, rubber on brass rolls.
1—Textile Vat Ager.
1—Forcing Jack.
3—Premier 5" and 10" Colloid Mills.

1000—W-BORE COPPER PRINT ROLLERS WITH DESIGNS, 40" to 48" lg; 14" to 20" Circumference.

FINISHING

2—Textile 90' Swing Tenter Frames, 50" wide, Butterworth stainless steel clips equipped with 80' Sheet Rock Insulated Tenter Frame Housings.
2—Proctor & Schwartz and National Loop Dryers.
1—Morrison 68" Palmer Quetch Unit.
1—Textile 5-Roll Chasing Calendars, equipped with 10 brass rolls.
2—Butterworth & Textile 2 and 3-Roll Calendars, 40" and 50" in width.
1—Butterworth 42" 2-Roll Hydraulic Schreiner Calendar.
3—Parks and Woolson 2-Blade 66" Shears, with list saving device.
1—Set 28—Butterworth Copper Dry Cans, 23" x 130", vertical stack, syphon type.
1—Set 30—Butterworth Copper Dry Cans, 23" x 108", vertical stack, syphon type.
1—Set 6—Textile Copper Dry Cans, 72" dia. x 48" face.
1—Set Textile Copper Dry Cans, 60" x 50", vertical stack.
2—Sets Textile Copper Dry Cans, 30" x 50", vertical stacks, 6 and 8 Cans.
2—Sets Textile Copper Dry Cans, 84" dia. x 44" face 5 and 2 Cans.
2—Sets Copper Dry Cans, 23" & 50", horizontal stack; 8 and 7 Cans.
1—Set 24—Textile Copper Dry Cans, 23" x 54", horizontal stack.

FINISHING (Cont'd)

10—Sets Textile & Butterworth Copper Dry Cans, 23" x 48", sets of 8, 10, 23, 25, 29 and 30 Cans.
1—Set 22—Textile Dry Cans, 23 x 44"; vertical stack.
5—Butterworth & Morrison 2 and 3-Roll Quetches, 50", 60" and 72" in width.
3—Burkhardt 60" Extractors, rubber lined baskets.
1—Fletcher 60" Extractor, copper lined basket.
2—Tolhurst 48" Extractors, steel and rubberized baskets.
2—Van Vlaanderen 48" Extractors, copper lined baskets.
1—King & Gerber 42" Extractor, copper lined basket.
2—Van Vlaanderen 54" and 60" Embossers.
1—Morrison 60" Button Breaker.

DYEING

6—Textile 50" Dye Jiggs.
1—G.L. Rope Washer.
1—Textile Continuous Full Width Boil-Off Unit, with stainless steel conveyor.
1—Textile 3-Compartment Dyeing Machine.
2—Rodney-Hunt 10' Rope Soapers.
4—Textile 50" 2-Roll Dye Padders.
2—Bleach House Jay Pilers.
2—Allen 1½ Ton Kiers, Vomit Type.
5—Butterworth and Textile, 50" 2-Roll Starch Mangles.
2—Textile 80" 2-Roll Mangles.

FOLDING

4—Van Vlaanderen and Textile 2-Roll Beamers, 60" and 50" in width.
5—Elliott and Hall and Curtis & Marble Flat Folders.
2—Parks and Woolson Model E. Doubling Reeling and Measuring Machines.
3—Butterworth, Parks & Woolson & Windle Doubling Machines, 48" to 60".
1—National Inspection Machine.
1—King & Gerber 70" Tubing Machine.
1—Parks and Woolson 42" Kaumagraph Machine.
1—Merrow 60 ABB Sewing Machine on Dinsmore Track.
15—Dinsmore and Birch Portable Sewing Machines.
Miscl: Connersville-Root Blower, Steamers, Batchers, Scutchers, Expanders, Winders, Generator Sets, Air Receiver, Tanks, Squeeze Rolls, Modine Heaters, Motors, Exhaust Fans, Pleaters, Printing Attachment, Mandrills, Doctor Blades, Star, Fitting and Furnisher Gears.

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1—400 KW Generator Set, 150# Steam Pressure, 40# back pressure, 250 volts, DC.
1—385 HP. Uniflow Steam Engine, connected to 250 KW Generator, 250 volts, DC.
2—284 HP. Engines, connected to 150 KW Generators, 250 volts DC.
1—Complete Panel Slate Switchboard for above equipment.
1—Worthington Horizontal Steam Air Compressor, with Steel Air Receiver.

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Printing, finishing and bleaching plant; set up in operating position, good buildings, steam, free water.

2—Rice, Barton & Fales Printing Machines.
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2—Textile 100-Gal. Copper Jacketed Tilting Agitated Kettles.
1—Textile 40-Gal. Copper Jacketed Tilting Agitated Kettle.
2—Arlington 8-Bowl Full Width Open Washers.
2—Textile 90' Swing Tenter Frames, stainless steel clips, insulated housings.
1—Textile 5-Roll Calendar.
10—Sets Textile Copper Can Dryers, 23" dia. x 48" to 54" face, horizontal and vertical stacks, in sets of 2, 5, 6, 7, 8, 21, 22, 24 and 25 Cans.
1—Textile 2-Roll Dye Padder.
2—Textile 50" 2-Roll Mangles.
2—Textile Rope Squeezers.
2—Curtis & Marble Folding Machines.
2—Parks & Woolson Model E. Doubling Machines.
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1—6'6" Sargent Cone Duster, Metal Ends
4—Whitin Wool Spinners 2½" Ring, Model A
2—48" C. & M. Fearnaught Mixing Pickers
5—D. & F., all iron, 60" x 48", 3 cylinder Cards with Breasts, Feeds and Condensers

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20—#50 Universal Winders "Rebuilt" to your order
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1—40 spindle O. Lever Cop Winder
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12—Beaming Frames various widths
2—20 spindle O. Lever Cop Winders
4—378 spindle Whitin Quillers
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200—C. & K. 50" Automatic Looms, 25 har., dobbies, motor drive
10—82" C. & K. Looms, 4x4 box, 25 har.
2—O. Lever Chenille Cutters
1—600 hook Royle Card Cutter, Piano type

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1—Gessner Heavy Duty Jumbo Press
1—80" D. Bessner Century Cloth Press
2—66" Voelker Cloth Press, late type
1—72" Gessner Century Press
1—Kenyon Cloth Dryer 80" wide
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1—C. & M. 66" Plush Shear
4—Model A, P. & W. 66" double shear
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3—A. T. & M. Co. Underneath driven Extractors 36" to 54"
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1—60", 2 cylinder P. & W. Steamer and Brush
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8—66" Windle Doubler & Rollers
1—66" P. & W. Doubler & Roller
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3—54" V. V. Embossing Calenders for Rayons
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1—Galv. Steaming Box for Yarn
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2000 Treadles for Cotton & Woolen Looms
4000 Temple Rolls for Woolens
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400 Shuttles for Rayon Looms
1—Complete Unit Franklin Package Dyeing Machine-500 lbs. Capacity-With Pumps, Extractors, P & S Drying Oven, 2 Lab. Dyeing Machines 6 lb. Capacity
1—Floor Scale 3750 lb. Capacity (Fairbanks)
50—Large Box Trucks
1—Deep Well Pump
1—Dean 2 Stage Vacuum Pump
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2—Saco-Lowell 34" F-5 Hopper Feeders.
5—Kitson 34" Hopper Feeders.
1—Saco-Lowell 40" Finisher Picker, with carding beater.
1—Kitson Feed Table, 20 ft. long.
1—Saco-Lowell latest type automatic Rake Distributor.
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36—deliveries Whitin Drawing, 4 del. heads, metallic rolls.
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Any make, in good condition.
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1—V.V. 3 roll Print Padder
1—Windsor and Jerauld Mercerizing Range
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20—Copper Can Dryers, 50" to 120"
4—90' Tenter Frame Ranges with Drying
5—30' to 50' Tenter Frames
10—Mangles & Padders—50" to 90"
1—Proctor & Schwartz Loop Dryer
24—Dye Jiggs
2—V. V. & Morrison Palmer Tenter Quetch Units
1—General Machine Palmer Unit
2—V.V. 50" Button Breakers—Brass Rolls
1—54" Rotary Singer, Kemp System
2—50" 5 Bowl Textile Calendars
2—Textile Hydraulic Schreiner Calendars
8—12' Dye Becks
2—Parks & Woolson 54" Doublers
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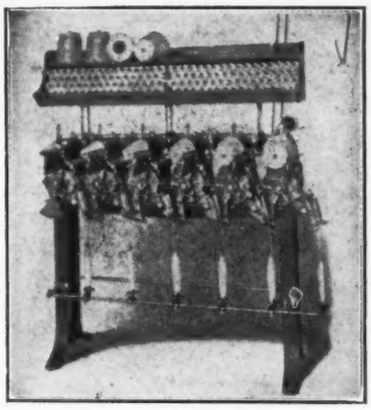

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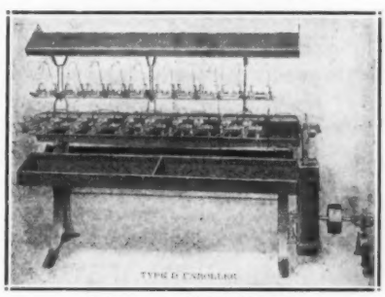

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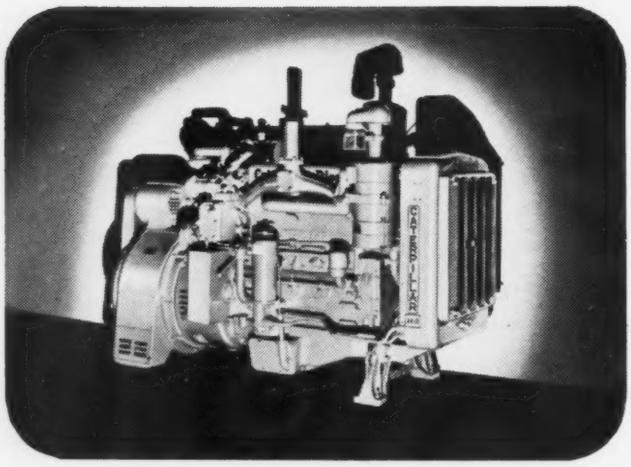

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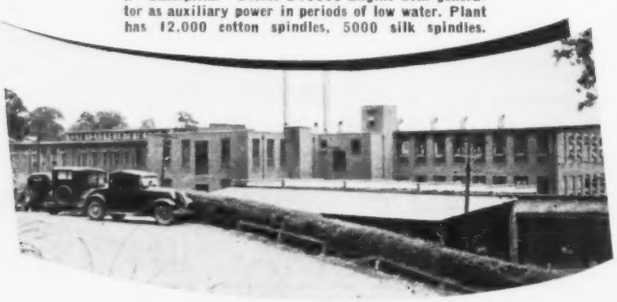

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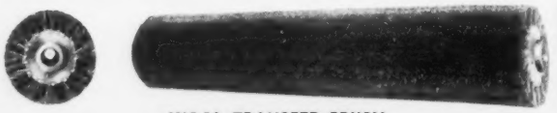

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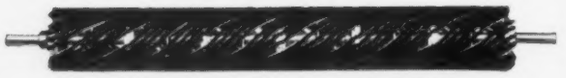

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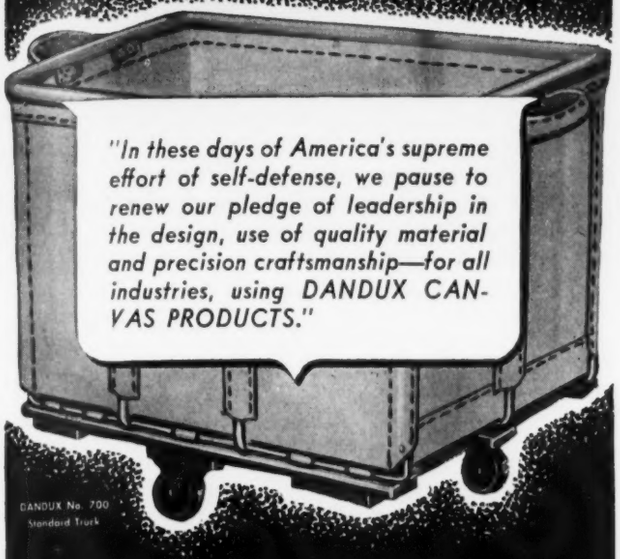
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Style 20

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The IDEAL BASKET for

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Manufacturers : POUGHKEEPSIE, N. Y.

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IN merchandising the most important factor after the quality of the product itself is **the package** in which it is presented to the consumer.

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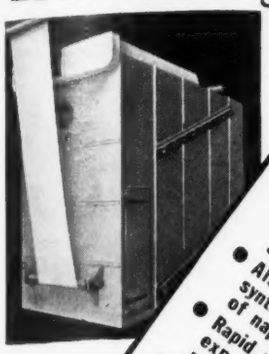

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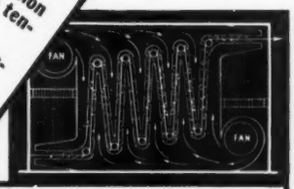

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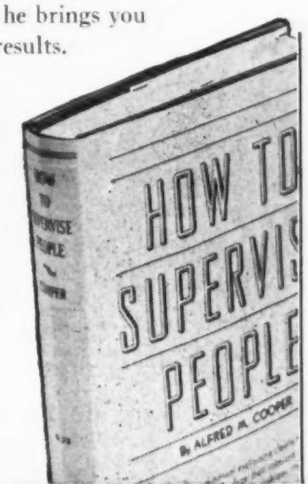

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Hunter Machine Co., James
Huyck & Sons, F. C.

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Jenkins' Sons, Inc., M. W.
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Sargent's Sons Corp., C. G.
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Scott Co., Henry L.
Shapiro Bros. Factors Corp.
Signode Steel Strapping Co.
Smith Drum & Co.
Solvay Sales Corp.
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Sonoco Products Co.
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Sturtevant Co., B. F.

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When you need buying data on any of the above firms, "look it up" first in the Textile World Yearbook and Catalog.

INDEX TO ADVERTISERS

An * indicates data will be found in 1941 Textile World Yearbook and Catalog.

	Page
Acme Knitting Machine & Needle Co.	154
Allen Mfg. Co.	126
*Allis-Chalmers Mfg. Co.	5
American Chain & Cable Co., Inc., Wright Mfg. Division	146
American Magnesium Corp.	13
American Viscose Corp.	14
American Woolen Co.	155
Aralac, Inc.	25
Arlington Mills	128
*Armstrong Cork Co.	89
*Ashworth Bros., Inc.	22
Atlas Electric Devices Co.	116
Bahnson Co., The	130
*Baldwin-Duckworth Div., Chain Belt Co.	133
*Barber-Colman Co.	125
Beach Soap Co., The	Back Cover
Benjamin Electric Mfg. Co.	15
Bischoff Co., Inc., Ernst	119
*Booth Co., Benjamin	130
Borne Scrymser Co.	156
*Boston Woven Hose & Rubber Co.	137-140
*Butterworth & Sons Co., H. W.	109
Calco Chemical Co.	9
*Caldwell Co., W. E.	155
Caterpillar Tractor Co.	165
Celanese Corp. of America	16
Ciba Co., Inc.	7
Cidega Machine Shop, Inc.	151
Collins & Aikman Corp.	150
Commercial Factors Corp.	Inside Front Cover
Cooper Co., Chas.	152
*Crane Mfg. Co.	152
Cross Cotton Mills	126
Dana Warp Mills	150
Daniels, Inc., C. R.	167
Darnell Corporation, Ltd.	108
*Dary Ring Traveler Co., The	169
*Davis & Furber Machine Co.	168
Day-Bright Lighting, Inc.	37
DeBothezat Ventilating Equip. Div. American Mach. & Metals, Inc.	148
Diamond Alkali Co., Standard Silicate Div.	156
*Dinsmore Mfg. Co.	152
*Dommerich & Co., L. F.	18
*Draper Corporation	3
*Emmons Loom Harness Co.	23
Fairbanks, Morse & Co.	113
Falls Yarn Mills	150
*Fidelity Machine Co.	122
*Finnell System, Inc.	21
Foxboro Co., The	42
*Fuller Brush Co., The	166
*General Electric Co.	17
General Electric (Lamp Dept.)	136
Goodyear Tire & Rubber Co.	11
Gulf Oil Corp.	36
Heineman Corp., Oscar	151
Henry, Andrew K.	150
*Howard Bros. Mfg. Co.	4
*Hungerford & Terry, Inc.	112
*Hunter Machine Co., James	117
Hyatt Bearings Division, General Motors Corp.	115
Industrial Rayon Corp.	12
*Ingersoll-Rand	135
Ingersoll Steel & Disc Div. Borg-Warner Corp.	143
*Ives Co., L. T.	155
Keever Starch Co., The	159
*Kenyon & Son, D. R.	159
Kidder Press Co., Inc.	26
Knitting Arts Exhibition	149
Lane & Bros., Inc., W. T.	168
*Laurel Soap Mfg. Co.	157
*Leyland Machy. Co., Thomas	122
Loper Co., Ralph E.	151
Lunkenheimer Co., The	147
Manhattan Rubber Mfg., Div.	Inside Back Cover
*Mathieson Alkali Works, Inc.	44
McGraw-Hill Book Co.	169
Meese, Inc.	116
Merrow Machine Co., The	154
Michigan Alkali Co.	121
Miller Co., The	41
Monomac Spinning Co.	128
*Monsanto Chemical Co.	31
Montgomery Co.	130
*National Ring Traveler Co.	151
National Starch Products Inc.	104
N. Y. & N. J. Lubricant Co.	151
Niagara Alkali Co.	29
Nonquit Mills	128
*Norma-Hoffmann Bearings Corp.	28
Oakite Products Co.	159
Old Dominion Box Co.	168
*Onyx Oil & Chemical Co.	157
Pabst Sales Co.	107
Parks-Cramer Co.	105
Penick & Ford, Ltd.	157
*Perkins & Sons, Inc., B. F.	132
Philadelphia Quartz Co.	156
Procter & Gamble	123
*Proctor & Schwartz, Inc.	169
Reeves Pulley Co.	106
R. I. Humidifier & Vent. Co.	120
Rome Soap Mfg. Co.	159
Ryerson & Son, Inc., Joseph T.	124
*Saco-Lowell Shops	8
*Sarco Co., Inc.	168
*Sargent's Sons Corp., C. G.	141
*Scholler Bros., Inc.	155
*Scott Co., Henry L.	128
Scott & Williams, Inc.	129
Shell Oil Co., Inc.	24
Sinclair Refining Co. (Inc.)	111
Sirrine & Co., J. E.	144
SKF Industries, Inc.	38
*Solvay Sales Corp.	114
*Sonoco Products Co.	87
Standard-Coosa-Thatcher Co.	43
Standard Pressed Steel Co.	145, 167
*Standard Soap Co. of Camden	120
*Stein, Hall & Co., Inc.	131
Sterling Ring Traveler Co.	166
Stokes Machine Co., F. J.	118
*Sturtevant Co., B. F.	34, 35
Sun Oil Co.	33
Taylor Instrument Co's.	32
Tennessee-Eastman Corp.	27
*Terrell Machine Co.	110
Texas Co.	47
Textile Machine Works	39, 40
*Thomas & Skinner Steel Products Co.	118
*Tolhurst Centrifugal Div.	144
Tompkins Bros. Co.	154
*Torrington Co., The	19, 20
U S Bobbin & Shuttle Co.	148
U. S. Ring Traveler Co.	91
*Universal Winding Co.	48, 92
Valhalla Co., Inc., The	146
WAK Industries	128
Watson-Williams Mfg. Co.	126
Wayne Mfg. Co.	151
*Westinghouse Electric & Mfg. Co.	134
*Whitin Machine Works	10
*Whitinsville Spinning Ring Co.	150
Whitman Co., Inc., Wm.	128
Wickwire Spencer Steel Co.	167
Wildman Mfg. Co.	153
*Wolf & Co., Jacques	127
Wolstenholme Sons & Co., Inc., Thos.	150
Wright Mfg. Division, American Chain & Cable Co., Inc.	146

■ ■ ■

PROFESSIONAL SERVICES

Lancaster Allwine & Rommel	160
Loper Co., Ralph E.	151
Polachek, Z. H.	160
Sirrine & Co., J. E.	144

■ ■ ■

SEARCHLIGHT SECTION

Classified Advertising

BUSINESS OPPORTUNITIES	160
EMPLOYMENT SERVICE	
Raymond Service, Inc., Charles P.	160
LIQUIDATIONS	163-165
POSITIONS VACANT	160
POSITIONS WANTED	160
WANTED TO PURCHASE	164
USED AND SURPLUS EQUIPMENT	160-165
Bay State Textile Co.	162
Blank Co., Inc., A & M.	165
Collins & Aikman Corp.	162
Concordia Mfg. Co.	164
Consolidated Products Co., Inc.	163
Dunn & Co., W. B.	165
French, C. M.	162
Fyans, A. F.	165
Gaines Textile Mchy. Co.	165
Gordon, Morris	164
Holland Laundry, Inc.	162
Horton, Harold W.	162
Hudson River Woolen Mills	162
Levitt	164
Langevin, George F.	164
Machinery Liquidating Co., Inc.	161
McCloskey, Inc., John J.	165
McDowell, Norman M.	162
Republic Textile Equipment Co., Inc.	165
Schwartz, S. B.	162
Solomon & Co., Inc., Robert	164
Speizman, Morris	162
Standard Mill Supply Co.	165
Stephenson, Harry	165
Sterling Fibre Co.	164
Textile Auxiliaries	164
Tidewater Equipment & Machy. Corp.	162
Wheeler, Frank W.	162-164
Windle & Co., J. H.	162

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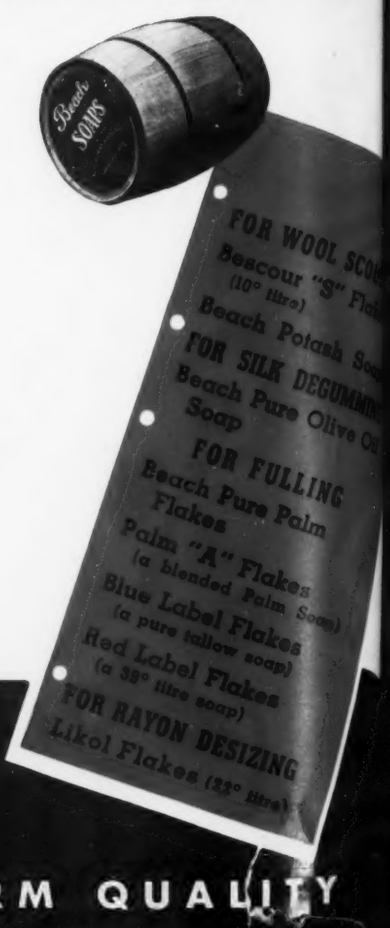

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